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**A SIMPLE MEANS OF SECURING THE BEST POS-
TURE FOR THE LEG IN CASE OF COM-
POUND FRACTURE.**

By DR. H. BANGA, Chicago.

I do not intend, at this time, to discuss the advantages which the plaster of Paris bandage affords in the treatment of compound fracture of the leg. Such a discussion would be as valueless and absurd as the setting forth of the antipyretic power of quinine and its great efficacy in intermittent fever. Since the ingenious adaptation of the plaster of Paris bandage, made during the Crimean campaign, by the great Russian surgeon, Pirogoff, and its subsequent popularization in later wars, it has been almost generally used by surgeons throughout the world, both in civil and military practice. The ease with which it can be applied and the rapidity with which it becomes solid, when it properly and perfectly encases the limb, are advantages which render it so superior to all other immovable

apparatus, (especially to starch and silica,) that, if the surgeon has the choice, he should never hesitate to employ the plaster.

He who understands the process of healing in a compound fracture, doubtless knows that, by encasing the leg and opening the bandage in order to expose the wound, the work is not completed, but another, often very tedious, task remains, namely: placing the limb in the most comfortable position.

In this paper, I desire to place before the reader the advantages of an apparatus I have found most suitable for this purpose, but will first offer some general suggestions regarding the posture of the leg and the methods heretofore used.

What is necessary to secure a good posture for the fractured encased leg? The posture is good,

1st, *When the broken bones are kept permanently in proper apposition.* It may seem useless to lay stress on this point, when the leg is once properly put up in the plaster bandage. But it must be borne in mind, that, when the swelling of the limb subsides after a few days, an empty space is formed between the skin and the bandage, thus allowing motion of the ends of the broken bones. By experimenting upon a dead body, lying level upon a table, with a leg fractured, it may be shown that, if the shoulders, or even the head, are raised slightly, the ends of the broken bone will always be displaced, providing they were properly set before the experiment. This difficulty can best be avoided with a patient, *by giving the leg an elevated position.*

2d, *When the circulation is not obstructed,* which is also best assured by elevating the leg.

3d, *When the surgeon can dress the wound in the most convenient manner.* There should be a free space all around the leg, so that the surgeon can examine and even touch, if he deems it necessary, every part, especially the wound, the toes, and the popliteal region, and he should be able to do so without disturbing the patient by raising the leg, etc. This will also enable him to regulate the after-treatment of the wound, as he judges most proper, viz., by the use of ice-bladders, poultices, prolonged irrigation, or, (best of all,) Lister's antiseptic dressing.

4th, *When the attendants are able to keep clean the bed; to apply the bed-pan, etc., without disturbing the patient's comfort.*

5th, *When the patient finds the dressing comfortable.* There is no doubt that in fulfilling the above requirements, there will be the least suffering for the patient. The beginner should bear in mind, that, ordinarily, the patient himself is the best judge of the posture and bandage. If he is comfortable, they may be considered good, and the reverse, if there is any part of which he complains. The surgeon should not hesitate to carefully examine the bed, to lower or to raise the leg, the shoulders, the head, or to cut open or to remove the whole bandage, however faultless it may appear, if the patient complains of any pressure, due care, of course, being taken to determine whether his complaints are without foundation.

Notwithstanding the apparent simplicity of these suggestions, their execution will be found difficult in very many cases, as is proved by the almost numberless apparatuses which have been devised since Jean Louis Petit published the description of his famous fracture-box, and which have all been used in connection with the plaster of Paris bandage. I pass them by, however, since for my purpose it will suffice to show that even suspension, usually considered most suitable, has so many disadvantages, that, if there is a better method claimed, it can not fail receiving *a priori* the attention of the practitioner.

Suspension is accomplished in various ways: by supporting the encased leg in a linen hammock, or wire-splint, attached to a cradle by india rubber tubings, or by suspending the limb from a kind of gallows crossing over the bed by means of cords and iron hooks, fastened at different points in the bandage. Whatever method be adopted, it requires a somewhat complicated apparatus, which doubtless will be found in the well supplied splint-room of a hospital, but which is rarely obtainable on the first day, and often not at all in the country or in an ambulance. Furthermore, the hammocks allow the crest of the leg only to be inspected, and for the dressing of the wound, its removal becomes necessary, so that, if there is a wound at

the calf of the leg with progressive suppuration, both surgeon and patient may sometimes dread the time for dressing.

I do not propose to enumerate all the inconveniences experienced in suspending the encased leg, as some of these are referred to elsewhere, but I will at once describe the method which I claim, from experience, to, be most suitable for the cases described.

The plaster of Paris bandage will become dry some two hours after its application, and the wound may then be exposed by means of a valvular opening, cut in the bandage. For our apparatus we merely require,

1st, A well planed board, from eight to ten inches in width, and one-fourth inch in thickness, and of about equal length with the leg from the popliteal region to the heel.

2d, Some wooden blocks, each about four inches long, one inch wide, and of different thickness.

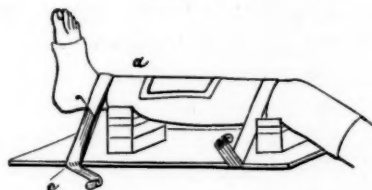
3d, Some small wooden wedges.

4th, Some rollers prepared with plaster of Paris, some plaster in powder, some water, and a small vessel in which to mix the plaster and water to the consistency of cream. All these things being in readiness, the apparatus is constructed in the following manner:

The leg is gently raised on a level, about one foot above the bed, by one or two assistants, while the surgeon places the board lengthwise on the bed beneath the leg. The surgeon then piles up the blocks evenly across the board, at two places, viz., beneath the ankle and under the popliteal region. Two pillars, each from six to eight inches high, are thus formed. The leg should then be lowered to rest on these pillars, and to prevent rolling to the sides, the above-mentioned wedges are used. (Fig. 1.) This done, the position of the limb must be carefully examined, for this is to be its final posture. Therefore, the patient should be asked, as to how he feels. Perhaps he wishes the foot slightly raised, which can be done either by placing another small block beneath the ankle, or by taking out a block from under the knee, or by gently moving either pillar upwards or downwards, as may be required to raise or lower the corresponding part of the leg. The upper portion of the bandage around the thigh, should be especially exam-

ined, to ascertain if there be any pressure or constriction, which often happens if the knee is bent too much or too little. If overlooked, such pressure will afterwards cause much trouble, often inducing the patient to crumble away the bandage. It is evident, that after having dressed some cases in the manner here described, the surgeon will soon be able to judge at once of the proper height of the pillars, if only he bears in

FIG. 1.



mind that the best posture requires the foot to be the highest part, while the knee-joint may be a little lower and somewhat flexed. He will accomplish, in a short time, what it has taken so many words to describe.

If the position is satisfactory, both to the surgeon and the patient, it is secured as follows: With a well-wetted plaster roller three turns are applied around the plaster bandage near the ankle, closely above or beneath the lower pillar. (Fig. 1 *a*.) On reaching the crest of the bandage after the third turn, the roller is passed obliquely downwards to the edge of the board, (Fig. 1 from *a* to *c*) and underneath the latter, to the opposite edge, from which it is carried upwards back to the crest of the bandage (at *a*). While the roller is passed underneath the board, this with the leg, must, by an assistant, be raised about one inch from the bed. The roller, thus applied, forms a kind of triangle with its base across the board, while the sides reach obliquely down from the crest of the bandages to the edges of the board. This triangular band must be repeated twice more, so that each of its sides contains three layers of roller bandage, and care must be taken to tighten well the roller while going around. Another well-wetted plaster roller is now wound spirally around the inner lateral portion of the triangular band. Beginning at the edge of the board, the

spiral turns gradually ascend, the roller being always tightened, and each turn joining closely the foregoing. Where they reach the leg, the roller is cut out, the end spread on the bandage (at *a* Fig. 1). In the same way, spiral turns are then made around the external lateral portion of the triangle. The object of the spiral roller and of the tight application is to double up the three strips which constitute the sides of the triangular band and to transform these bands into two round, slender columns, which we may call *plaster stilts*. The strength of the stilts will be increased, and their appearance greatly improved by coating and smoothening them with plaster cream. After the stilts near the ankle are completed, a second pair is, in like manner, made up under the knee, corresponding with the upper block-pillar. After a few hours, the stilts will be dry and hard, and then, taking away the blocks, the surgeon will find that the leg is very securely and comfortably supported by the plaster-stilts, on a level from six to eight inches above the board—plaster-bandage, stilts and board forming one whole immovable apparatus. (Fig. 2.)

FIG. 2.

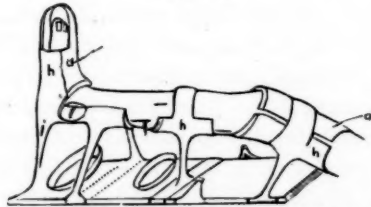


When I first employed the method here described, I made three pair of stilts, also one single one, reaching from the sole of the foot to the lower end of the board. (Fig. 3, *i*.) I also thought it necessary to make the stilts of five longitudinal and two spiral layers of roller bandage, and to coat all these with a large quantity of plaster cream. Of course, I produced a very heavy and clumsy apparatus. Later, I learned, with much astonishment, that even a slender column thus constructed, had all the strength required. Even three stilts, two at the knee-joint, and one extending from the foot to the lower edge of the board, (Fig. 3, *i*), would be sufficiently strong to support a leg,

but as the single stilt necessitates much extra labor to fasten it to the board, its construction is more tedious and less expeditious than that of a pair of stilts at the region of the ankles. Therefore, after my experience, I would recommend the plan first given as the best; viz., two pair of stilts. The advantages afforded by the apparatus just described are:

1. *There is no difficulty, even in the country, to get the materials we need, or to use them properly.* I think I hardly need say, that the description given of the blocks, the wedges, and the way of setting them up, is to be taken *cum grano salis*; for, as the hospital-surgeon can, at all times, have in

FIG. 3.



readiness in the splint-room sets of blocks, etc., just as well can the ill-provided country practitioner use whatever he finds at hand, as stones, bricks cut in pieces, for blocks, or rags instead of wedges, articles he can obtain, even in the poorest family, should he be obliged to treat there a case of compound fracture of the leg.

2. *The dressing of the wound is easy for the surgeon and painless for the patient.* As every part of the leg is exposed, the surgeon can touch any spot with finger, probe or forceps, or, by bending his head, he can inspect the lower portion of the limb, or the calf, without moving the patient a hair's breadth. The time required for dressing the wound will be much shortened by saving the task of piling up the cushions, pads and sand-bags, and of adjusting splints and suspending strings, and the surgeon will be enabled to shorten the time of his visits, much to his own and the patient's benefit. He is also more independent of the nurses and the stewards,—an advantage of no less importance in an overcrowded ward, than in the country where you are almost always as-

sisted by inexperienced hands. Furthermore, the apparatus will be found very suitable for the treatment of the flesh wound attending the fracture, because vessels can be placed everywhere under the plaster bandage, to receive the discharge, or water running down from it, or out of the drainage tubes. Ice-bladders or poultices can be applied to the bandage without difficulty. For readers acquainted with Lister's antiseptic dressing, which yields, in the grave cases of compound fracture of the leg, the most brilliant results, I will add that my apparatus permits also the application of the spray and carbolized muslin rollers.

5. *The stilt apparatus is useful also in the treatment of erysipelas and progressive suppuration.* Since the plaster of Paris bandage has superseded the use of splints, for the reason that it keeps the fragments better adjusted, these evils undoubtedly complicate a compound fracture less than formerly, yet they occur often enough, especially in gunshot wounds, resulting in much suffering, sometimes the loss of a limb, and even the death of the patient, multiplying besides the surgeon's already tedious labors. To illustrate the application of my method, I append notes of a typical case:

In 1874, a case of compound fracture of the leg, caused by a heavy wagon passing over it, was admitted to my division at the hospital of Basle, Switzerland. Both bones were broken, the tibia splintered, and a lacerated wound, as large as the palm of the hand, was found about two inches above the ankle joint, on the inner side of the leg. The soft parts were also badly bruised. The fracture was at once incased, and after two hours, placed on stilts, as described; a compress, soaked in an antiseptic solution, was laid on the open wound. During the first three days nothing worthy of note occurred, but on the fourth day, the wound became very painful and swollen, copious suppuration taking place, the patient becoming feverish. The next morning he was very ill; had had a chill during the last night, and the wound was more painful and swollen; more pus was discharging. On the inner side of the thigh I noticed the reddish streaks, which indicate lymphangitis; the inguinal glands were also painful and

swollen. As the pus seemed to come from above, I enlarged the opening of the bandage upwards, about two inches, thus exposing the suppuration progressing along the long flexor muscles.

A large abscess was there opened. Immediately after the incision, the patient felt greatly relieved, and soon fell asleep for some hours. However, in the evening, the pain became more severe, and the next morning I discovered a pouch connected with the abscess, already opened: the pouch extending downwards and backwards in the calf. The bandage was cut away in the same direction, and to a sufficient extent to fully expose the region, where the redness, swelling and pain betrayed the deep-seated matter. A large incision was made, and the pus allowed to escape through a drainage tube into a vessel beneath the leg. The next ten days the patient did well, the lymphangitis disappeared, *pus bonum et laudabile* was secreted from the wound, mixed with detritus of the bruised tissues. On the morning of the fifteenth day, however, I found the patient once more feverish; he complained of throbbing and burning in the leg. There was no remarkable change about the wound, and the two abscesses before opened seemed to be cicatrized. But on gently examining the skin with the finger, as far as the leg was exposed, a suspicious reddish tint and a certain tenderness about the upper edge of the opening, induced me to still enlarge it in the same direction. I discovered a large abscess, which could only be wholly laid open by cutting away the inner half of the bandage to the knee-joint. Perhaps some one will ask: "How was it possible to take away the inner half of the bandage from two inches above the ankle to the patella, and also a piece as large as the palm from the back, without destroying the whole apparatus?" "Just by means of those stilts," I answer. According to the directions given above, I had put the incased leg on four stilts, *i. e.*, one pair near the ankle, the other pair just below the popliteal region. When the opening in the bandage was first enlarged, the latter was undisturbed, and so it was when I took a piece from the back. Only when the last large abscess was revealed, the inevitable sacrifice of the inner stilt

of the upper pair caused some apprehension as to the safety of the structure. However, I could easily secure the apparatus, as I had done before in several cases, that is, before exposing the abscess, I erected a new stilt above the knee-joint. This stilt was made as previously described, with the only difference, that the roller, after crossing beneath the board, was divided so that the end could be spread over the latter. After some three hours, when the new stilt had become dry, I could cut off the inner, upper stilt without any danger, its task being assumed at the same moment by the new stilt.

Changing the stilts is to be regarded as most advisable, and for this reason I append the notes of another of my cases treated in 1874.

After incision of the right ankle joint, I had put up the leg very comfortably by means of two plaster of Paris splints, an upper or dorsal, and a lower or plantar. They were modeled to the leg one hour before the operation, and coated with paraffin, so as to render them waterproof. Afterwards, I applied the stilts. Rather profuse suppuration followed, and on the fourth day a very serious phlebitis, (*venæ saphenæ magnæ*,) and two days afterwards erysipelas migrans, which caused several abscesses, so that, at different intervals, I had to take off the whole upper-splint from the ankle-joint to the patella, and I proceeded in about the same manner with the back, taking away at first a piece as large as three fingers, from a little above the insertion of the *tendo Achillis*. About ten days later, I discovered an abscess on the upper third of the calf. When I perceived, that, by cutting away the necessary amount, the whole back of the leg would be deprived of all support, I proceeded to secure the endangered piece as follows: With a well wetted plaster roller I made two circular turns in the middle of the leg, corresponding to the middle piece of the back splint to be secured. On the third turn I went around only to the middle of the calf, where I ordered my roller to be held in a loop, formed with another plastered roller by an assistant from the opposite side. After the two ends of the loop were clipped and spread on the circular turns, my own roller appeared fastened to the middle of the calf, whence it proceeded

perpendicularly downwards to the board, and, whilst an assistant's forefinger held the bandage to the board, I carried it straight across to the edge of the board, crossed it underneath and returned from the opposite side to the foot of the perpendicular band and around it, securing it by spreading the clipped end of my roller on the board. In just the same way I made two more turns with my roller and lastly dressed the stilt by means of spiral turns and coating with plaster cream, as heretofore described. When the stilt was dry, I removed the piece from the back splint, which I had to take away by means of a small saw, after which I found the remaining middle portion of the back splint very properly supporting the calf, as a kind of *pelotte* on the top of the column. (Fig. 3, p.) In this apparatus the patient was kept over three weeks and during this whole time the wound and all the abscesses were constantly in sight and opened as soon as fluctuation was evident. There was no difficulty in dressing the wounds. In spite of the erysipelas the process of granulation proceeded very well, and after fifteen days there was no more fever. After the lapse of three weeks, nearly all the abscesses were cicatrized, and the consolidation of the bones was sufficiently strong to warrant the changing of the remnants of the first apparatus, on about the 25th day after the operation. I believe one should hardly go further than just described in cutting away and mutilating the bandage, yet I think the readers will agree with me, that it is sometimes very convenient for the practitioner, and no less beneficial to the patient, to defer its renewal even for two or three days by the means mentioned. In the case last reported, I would attribute the prompt healing of the wound chiefly to the absolute rest in which the foot and the leg were kept more than three weeks; during the third week this rest was only possible with the stilt put under the calf.

5. *It is almost needless to say that compound fractures of the leg are not the only cases where the stilt apparatus may be used.* The surgeon will find it very suitable also, in the after-treatment of cases of excision of the knee, elbow and ankle joints.

6. *There is no difficulty when the nurses render proper*

services to the patient, as with the bed-pan, cleaning the bed, etc.

The apparatus I have described is a modification of the method described some ten years ago by Dr. Ries, Billroth's assistant at Zürich and described in an interesting pamphlet on the plaster of Paris bandage. Dr. Ries puts the encased leg on two or three small blocks, with an upper concavity, fastening the leg and the blocks on a board by means of either an ordinary or a plastered roller. When I entered as house surgeon the hospital of Basle, Switzerland, I learned from my predecessors the method; a vast number of blocks and boards being at hand in the splint-room. But, as the reader will perceive, Dr. Ries' method is rather clumsy; the blocks move very often; there is not a free space all around the leg, etc.; so that I thought it might prove useful to publish a description of my stilt apparatus, because since I first devised it in 1874, I have proved its advantages in many different cases.

Should it be thought that I have employed too many words in explaining a very trifling affair, my response could be best formulated in the apoththegm of Dieffenbach, the great master of our profession: "that in surgery success almost always depends upon the scrupulous and rather pedantic observance of a host of trifles."

HYSTERICAL APHONIA.

By G. WHITEFIELD WARD, A.M., M.D.

[Late Clinical Assistant to the London Throat Hospital, etc., etc.]

There is no subject in the whole history of medicine so open to controversy as hysteria. One author defines it, "a perversion of the will;" another, "an inability or indisposition to exert the will;" whilst a third, denying that it is a special disease, says that it is "merely a symptom," and defines it as "a series of phenomena occurring in the course of a disease, sometimes known and sometimes obscure." Louyer-Villermey, decidedly holds that every hysterical woman is short, stout,

dark, plethoric, and full of life and health. Sydenham, White, Copeland, and English writers in general, represent the hysterical predisposition with almost the very opposite characteristics. Whilst Briquet says the disease takes women as it finds them, blondes, brunettes, stout, thin, weak, ruddy, or pale, there is no choice. My idea in giving these different opinions is to show how impossible it would be for any one to form a correct view of hysteria by a perusal of the literature current upon the subject. Taking this fact into consideration, it is not at all surprising to me that writers have hitherto confounded hysterical loss of voice with the so-called functional aphonia, setting down hysteria as a prime cause of the latter, and I shall endeavor, in the present article, to rescue hysterical aphonia from the mire in which it has inadvertently fallen, and place it upon a firm and substantial basis of its own.

DEFINITION: *Hysterical aphonia* is that species of loss of voice which is due to some defect or perversion of will power presiding over the physiological action of the muscles of the vocal cords, which, for the time being, causes a false or simulated paralysis of these muscles.

Functional aphonia is that species of loss of voice, which is due to a true paralysis of one or more of the muscles controlling the action of the cords, and preventing their approximation or their due tension when in apposition. As may readily be inferred from the first of the two definitions given above, the theory which I advance, and shall endeavor to prove, with regard to a case of pure, uncomplicated hysterical aphonia, is, that there is not the slightest paralysis of any of the muscles controlling the action of the cords, that the muscles themselves, and the nerves presiding over their action are in a perfectly normal condition, and that the trouble lies with volition, which, from some cause or other, is deficient or perverted.

Hysterical aphonia is most liable to occur in the single female at or about the time of the commencement of puberty. The luxurious and lazy habits peculiar to a certain class among the wealthy, a class that have literally nothing to occupy their minds, except the perusal of silly novels, and the performance

of the sillier things that "society" prescribes, conduce to the development of hysteria. The exciting cause is generally some sudden emotional disturbance; as shock, caused by sudden death of a near relative; fright brought about by some impending calamity, as shipwreck; or anxiety produced by the continued absence of a missing husband or child.

Functional aphonia is liable to occur in both sexes and among all classes of society, from the richest to the poorest, although one type of it, namely, that dependent upon anæmia, is more apt to overtake poorly-nourished working girls, especially that class who are obliged to sit through long and weary hours in closely-confined badly-ventilated apartments. A paresis of one or more muscles of the cords, from a prolonged bad usage of the voice, is common to all trades and professions, especially those that require a continuous loud talking, or, more properly speaking, a shouting in the open air, as the auctioneer, the stump speaker, the hawkster, &c. The same thing may happen to a singer from a sudden strain of the cords during too great an effort at vocalization.

Symptomatology. The will is perverted and defective, while ideas exhibit excessive activity. The hysterical patient says that she cannot speak aloud, and while under the belief that the action is impossible, it is so, although it may be obvious that the patient is pretending, or acting a part, for the time being; it is also often true that the hysterical patient states the fact. What she wants is motive, which may often be supplied by a sudden alarm or accidental circumstance. This symptom, or idea, is not confined to talking, but is manifested in other voluntary acts; one person says she cannot move this or the other limb, another that she cannot stand or walk, a third cannot open her eyes. But often, under the influence of some unexpected event, they do the very things that were said to be impossible. Hammond says that "hysteria is a partial insanity—an insanity, however, in which the patient does not entirely lose control, and which is capable of being overcome by the voluntary effort of the patient, provided a sufficient stimulus to normal condition be brought to bear. It thus happens that through the influence of such stimulus every

symptom of hysteria disappears as if by magic." If you examine the larynx of a person suffering from pure, uncomplicated hysterical aphonia, you will see that the throat is healthy, or is simply relaxed, the vocal cords being widely separated, and slight effort being made for their approximation. The patient makes no attempt to whisper aloud; the failure is evidently not in the apparatus of the voice, as a mechanical production, but in the will to put that machinery into play. A common symptom is that of a ball, or lump, in the throat, a something which the patient cannot swallow, and which she feels will choke her. It seems to her as if something were tight there; she makes constant attempts to swallow, but the lump will not move. Mental and emotional conditions are apt to be exaggerated in a great degree. I have frequently seen the mere introduction of the mouth mirror of the laryngoscope bring on paroxysms of immoderate and uncontrollable laughter, which seem to have been excited by sensations of tickling experienced by the patient. I have also seen the same manipulation set up a prolonged fit of sobbing, the patient asserting that the introduction of the mirror caused great pain.

If you examine the larynges in cases of aphonia dependent upon true paralysis of the vocal muscles, the parts will present a picture differing widely from that depicted in the hysterical type. If the tensors are involved, an impaired vibration will be observed; if the arytenoides is affected, the glottis will be widely open posteriorly; if the combined action of the crico-arytenoides lateralis, and the arytenoides is prevented, the vocal cords will remain widely separated, without any appearance of coming together. The general appearance and condition of the internal structures of the larynx in this latter class of cases will depend entirely upon the cause; if from anæmia, there will be a diffused paleness, not, however, confined to the windpipe, but extending upwards into the fauces and mouth, especially marked in the mucous membrane covering the hard palate; if from overstrain of the voice, whether from acts of singing or speaking, the vocal cords are apt to be found congested and mottled red, with possibly a little thickening, the

ventricular bands to be more highly colored than natural, and slightly enlarged, and the neighboring parts inflamed.

Diagnosis. If the symptoms already described be borne in mind, and the history of each case be carefully considered, there is not much difficulty in diagnosis. The form of true paralysis of the cords, which is most likely to be confounded with the hysterical type, is that in which the cords remain widely separated during an attempt at phonation, the difficulty being in the crico-arytenoideus lateralis and arytenoideus, the adductors of the vocal cords. These two conditions can be readily diagnosed if the following test be employed. When the mouth-mirror is in situ, direct your patient to cough; if the case is one of true paralysis, the cords will not be visibly affected by the act of coughing; if it is one of hysterical or false paralysis, then the cords will be seen to adduct and approach each other in the median line. This forced adduction will invariably occur in connection with hysterical loss of voice. Another diagnostic point, and one that will instantly set all doubt aside, if it is present, is, that frequently, when undergoing a laryngoscopic examination, the hysterical patient will forget all about her infirmity, and utter, in a natural tone, the vowels a and e, when requested to do so by the examiner, the excitement of the moment being sufficient to divert the sufferer's attention from the throat, and allow volition to act normally. I call to mind an interesting case, illustrative of the above point, which occurred to me in my practice a little less than a year ago. The patient in question, a young lady æt. 18, suddenly became aphonic, about two weeks prior to my seeing her. The history which I elicited at the time established the fact that she was of an hysterical diathesis, but threw no light upon the exciting cause of the aphonia. She had always been of a nervous and excitable temperament, and was in the habit of losing control of her emotions at the most trivial circumstance. I further learned that the patient was subject to attacks of aphonia, having lost her voice several times before, but that the lost power had, in each instance, returned within a week.

Laryngoscopic examination. The larynx was found to be

in a perfectly healthy condition, likewise the fauces and mouth. On requesting the patient to say a, to my great surprise, she did so, speaking in a clear and loud tone, although but a moment before she had positively asserted that she could not talk above a whisper. During the above act, both cords were distinctly seen to adduct and approach each other normally, in the middle of the air tube. Upon withdrawing the mouth mirror, and again requesting my patient to say a, she could not give utterance to that letter above a whisper, showing clearly that the cords were not being adducted. Another laryngoscopic examination was made with the same result as the first, the voice being restored, only to be lost again on the withdrawal of the mirror. Not fully appreciating the symptomatology of this case, I applied a mild astringent to the cords, and requested the patient to call again. On the occasion of her next visit, I followed exactly the same course in my examination as above described, with exactly the same results. Feeling confident that no ordinary plan of treatment would ever restore her voice, and that some sudden shock was necessary to produce the desired effect, I determined to invoke the aid of electricity; to this end I made use of the strongest current obtainable from a single-celled electro-magnetic apparatus, applying the negative pole externally over the thyroid cartilage, by means of an ordinary sponge electrode, and the positive pole directly upon the vocal cords, by means of Mackenzie's laryngeal electrode. Immediately, on receipt of the shock, the patient made violent efforts to escape, wildly gesticulating, and screaming outright, and I was compelled to withdraw the instrument, having retained it within the larynx for a few seconds only. This one somewhat severe application completely restored the voice of this patient, and the cure has been permanent up to the time I last met her—a fortnight ago. I confess that this case completely mystified me at the time, my ideas of hysteria, both as regards its pathology and histology, being very vague. It also stimulated me to a desire of more thoroughly understanding and comprehending the various phases developed in connection with hysteria, especially in its relations to aphonia. To this end, I made a careful examination, both subjectively

and objectively, of all cases of aphonia which applied for treatment at the "London Throat Hospital," during my term of service, which were set down as hysterical. In the above case, the mere act of introducing the mirror caused the patient to forget all about her lost power, and to unconsciously say a. The slight diversion brought about at the time of the examination was sufficient to turn the perverted will power into its proper channel, and allow the delicate laryngeal muscles to adduct the cords in a normal manner. If the aphonia had been due to a true paralysis of the adductor muscles, would it have been possible for it to have been dispelled by such a slight circumstance as making a laryngeal examination? By no means; the deficient muscular action would have to be restored by a regular and judicious course of treatment, applied with especial reference to the cause, and no diversion of mind or shock of any description would restore the lost power. When I withdrew the mirror and spoke to the patient, she answered me in a whisper and could not, or would not, speak aloud; there being nothing to occupy her mind, the one idea, the lost power, predominated.

Another very instructive and most remarkable case of hysterical aphonia came under my notice at the "London Throat Hospital."

The patient, a woman *æt.* 24, had suffered with complete loss of voice, of six months duration. On the day of her application for treatment, she started out with an associate to walk to the hospital, a distance of about two miles. During her journey thither, she quite alarmed her companion by addressing her in conversation, speaking aloud for the first time in six months. On questioning her at the hospital, prior to a laryngoscopic examination, she declared that her voice was as good as it had ever been. A careful examination elicited nothing except a little paleness of the ventricular bands and neighboring parts, and the cords were found to act perfectly well in every respect. Having applied a mild current of electricity direct to the cords, and ordered a mixture composed principally of *ammoniae carbonas*, the patient was dismissed, apparently cured, and as she did not return during my stay

there, I conclude that her recovery was permanent. I do not think it could be possible to produce any combination of cases so remarkably illustrative of the affection to which I have devoted these pages as the two enumerated above. Hysterical manifestations developed in other parts of the body than the throat, seem to me to afford further proof of the correctness of the theory which I have advanced. J. Russell Reynolds, in "Reynolds' Practice," comparing hysterical paralysis of the lower extremities with true paralysis of these organs, says "that the ataxic or paraplegic patient tries to walk; the hysterical girl tries to show that she cannot use her limbs; if the former forgets himself, he falls; if the latter forgets herself, she walks." Most every experienced practitioner has met with cases of hysteria in his practice, in which the seemingly lost muscular power, whether of the arm, leg, or other member, could be completely restored, for the time being, by a little tact or ingenuity in absorbing the patient's attention, or directing her thoughts in a different channel. Hammond, in his "Diseases of the Nervous System," relates the case of a young lady who came under his charge for what was supposed to be a disease of the spinal cord; she had taken to her bed suddenly, soon after striking her back rather gently against the edge of the table, declaring she could not walk. On examination, he (Prof. Hammond) was convinced that there was no disease whatever of the spine other than that of a purely hysterical character, and so he expressed himself to her. She, nevertheless, insisted upon it that her spine was seriously injured, and she continued to keep her bed, lamenting daily her sad fate at being compelled to pass so long a time shut out from the enjoyments of life. There was no paralysis, for she moved her legs about freely enough in bed. But one evening, her brother, who had been long absent, returned home. She heard the bustle in the house attendant upon his arrival, but all were too busy to pay any attention to her in the chamber up stairs. Suddenly exclaiming, "I can stand this no longer," she sprang from her bed, rang for her maid, and hurrying on her clothes, proceeded down stairs, and entered the drawing-room, to the great surprise of all her family. The same author

records another instructive case, namely, that of a lady who closed her eyes, and declared that she could not open them. She was brought to the professor as a case of double ptosis. He, after finding no evidence of such cerebral lesions as are generally met with in cases of ptosis, and having ascertained the fact that she was of an hysterical diathesis, expressed the opinion to her friends that the closure of her lids was not dependant on true paralysis of the muscles controlling their action, but on hysteria, or, in other words, it was a hysterical simulation. The application of the induced current proved so disagreeable, not to say painful, to the patient, that two applications were sufficient to restore her volitionary power so that she opened her eyes without difficulty. Savory, in an article on hysteria, in "Holmes' Surgery," says "that hysteria frequently occurs strangely disguised, and its essential features concealed in the garb of some other disease whose characters it assumes and whose symptoms it mimics. This it is which specially gives interest and importance to hysteria, which so often renders it a stumbling-block in the way of a correct diagnosis, frequently the similarity of its symptoms leading to the error of mistaking a simulated for a real disease. And this form of hysteria has been aptly termed protean, for there are few diseases the symptoms of which are not at times more or less mimicked by this singular affection."

Therapeutically, the differentiation of hysterical aphonia from the functional variety is of vast importance, not only to the success of the practitioner, but also to the welfare of the patient, for if a case of ordinary functional aphonia be set down as hysterical, and the physician start with the idea that the paralysis is simulated, he is apt to pursue a too harsh plan of treatment, namely, the undue use of electricity, which will have a tendency rather to increase than to diminish the difficulty. In functional aphonia, the continued and systematic employment of mild currents of electricity, combined with astringent applications to the cords, and the internal administration of tonics, such as quinia and iron, if there be co-existent anæmia, will in nearly every instance, effect a cure. In hysterical aphonia, a sudden, powerful shock of electricity will

generally restore the voice, and frequently a second application will not be necessary, the fear of a repeated dose proving sufficient stimulus to volition to allow it to act in a normal manner.

123 WEST 11TH ST., N. Y. CITY.

AN IMPROVED METHOD OF PERFORMING THE RADICAL OPERATION IN EMPYEMA.

BY E. FLETCHER INGALS, M. D.

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The removal of pus from the pleural sac by means of the aspirator, even though often repeated, is not likely to cure the patient, however, in rare instances recovery follows this method of treatment, therefore it is advisable to give it a trial.

As soon, however, as it becomes apparent that this procedure is not sufficient, the radical operation, or the establishment of an opening for free drainage and cleansing of the cavity is indicated.

With regard to the operation, Prof. Flint in his work on practice, says, "An opening should then be made at the bottom of the pleural sac, allowing the pus to escape freely. Air will gain admission into the chest, and, since this is unavoidable, its ingress and egress should be unobstructed. A small orifice, not sufficient for the free escape of the pus, and allowing air to be pent up within the pleural cavity, is injudicious. The pus becoming decomposed and fetid, acts as an irritant on the inflamed surfaces, whereas, if it drain away as fast as it is formed, and the cavity of the pleura be well ventilated, this result does not follow."

Dr. W. W. Gerhard, in the revised edition of his work (1860), remarks of this operation, the chances of recovery are not on the whole increased by the operation, unless it be performed very carefully, and it is one which we should not practice, unless it be to relieve excessive dyspnoea. After refer-

ing to Dr. Bowditch's method of operating, he says, "I must confess that the operation is always of doubtful benefit, and very often inadmissible. Indeed, in ordinary cases of chronic pleurisy, I would not dream of performing it."

On this subject, Prof. Frank H. Hamilton in his work on military surgery, says, "The existence of pyothorax having been fully ascertained, no time ought to be lost in giving the pus a thorough evacuation." He also says, regarding idiopathic pyothorax—this term being employed in contradistinction to traumatic—"It is of the highest importance to exclude air." On the contrary, Doctor Fuller thought the admission of air of not the slightest importance.

Doctor Bowditch is in favor of excluding the air, though he does not lay great stress upon this point. The use of a drainage tube as first proposed by Chassaignac, and afterwards practiced by Drs. Gosselin, Goodfellow and DeMorgan, is recommended by Drs. Waters, Watson, Aitken and others. Prof. Gross in his *System of Surgery*, fourth edition, 1866, says of the use of the drainage tube, "This treatment it seems to me, should not be encouraged, as it is both harsh and dangerous." The drainage tube here mentioned was introduced between the fifth and sixth ribs and brought out at the lower part of the pleural sac through a counter opening.

Fraentzel in the fourth volume of Ziemssen's *Cyclopædia*, says of this treatment: "No physician would now carry out drainage in the way it was proposed by Chassaignac."

In the Boston *Medical and Surgical Journal*, August, 1874, Dr. Henry Clarke, of Worcester, after reviewing the various methods of operating that have been suggested, remarks, that after two thousand years of experience and prolonged discussion, concerning the expediency of the operation and the method of operating, we come back substantially so far as relates to empyema, to the simple practice of Hippocrates, that is to opening freely with the knife and keep the incision open so long as pus continues to collect.

The weight of authority is in favor of free drainage, and while many do not think the entrance of air injurious, perhaps for the reason given by Dr. Flint, viz., that it is unavoidable,

there are many others who think its exclusion a matter of no little importance. To accomplish this end, it has been recommended that the operation be made under water with the patient in a bath, and that the wound be hermetically sealed.

Mr. Erichsen suggests that a canula or an elastic tube may be left in the wound to allow the pus to be drawn off and the cavity cleansed. The late Prof. Freer, Drs. Andrews, Powell, and others have used a siphon drainage tube introduced through a free opening into the chest; but all the methods heretofore recommended, contemplate either the frequent repetition of the operation or the admission of air.

Frequent operations by means of the aspirator have not thus far been attended with satisfactory results, and although the entrance of air into the pleural sac is not a serious accident, still it leads to putrefactive changes in the pus, if this be not removed so fast as formed; and, from several cases observed in the Roosevelt Hospital in 1873, it appears that the amount of pus secreted is much greater in patients where air is freely admitted than in those where it is excluded, another fact in support of the position of Drs. Hamilton, Bowditch and others.

By the modification in the operation suggested in this paper, we secure the essential points insisted upon by nearly all who have written on this subject; viz., free drainage and the exclusion of air.

For the improved operation the following articles are required: A trochar, the canula of which is of just sufficient size to allow the passage through it of a drainage tube; a piece of soft rubber for a valve, $2\frac{1}{2}$ inches in diameter, such as dentists use for the rubber dam, excepting that it should be about twice as thick; a piece of rubber tubing (drainage tube) about 3-16 of an inch in diameter, and a foot and a half to five feet in length; an elastic bandage, two inches in width, long enough to reach around the patient's chest and pin; and a small ring, which, when slipped over the bent drainage tube will hermetically seal it at the point of flexure.

The drainage tube should be perforated on the sides in three or four places, near the extremity, which is to be inserted into the chest. It should then be marked with ink at distances of

about six and nine inches from the same end, so that when introduced, we may know how much of the tube is within the pleural sac.

The operation is performed in the following manner: The patient being ready, the tube is filled with water, its distal end closed by the ring, and placed in a basin of water beside the bed. The trochar is thrust through the centre of the small piece of rubber, which is to act as a valve, and this is drawn over the canula. Having oiled the trochar, it is to be thrust into the chest, at either of the points usually recommended for the operation.

As the stilet is withdrawn, the thumb should be placed over the end of the canula to stop the flow of pus until the drainage tube can be reached. The tube is then crowded through the canula for a sufficient distance, and the canula is withdrawn; as it leaves the chest walls, the rubber valve is slipped off upon the tube close to the surface of the chest. The extremity of the tube may now be opened under water, the canula slipped off and the pus allowed to flow.

As the stilet is withdrawn, the pus escapes in a full stream, and during the passage of the tube through the canula no air can enter, on account of the pressure of pus from within.

In this way, the operation can easily be completed without the entrance of a single bubble of air.

After the tube is inserted, an aspirator can be attached, or the pus may simply flow out through the siphon. The latter method is sometimes preferable, as the aspirator is liable to cause too great atmospheric pressure upon the expanding lung, and consequent rupture of some of the smaller blood vessels. After the pus has ceased flowing, the cavity may be washed out with a one or two per cent. solution of carbolic acid, at 100° F., or the cleansing may be deferred for twenty-four or forty-eight hours.

The latter method would probably cause less irritation than the former.

After the pus has been discharged, a slit should be made in the middle of the elastic bandage, a couple of inches in length, for the passage of the tube, and the bandage should then be pinned snugly about the chest, over the rubber valve.

In the after treatment, the pleural sac should be cleansed once or twice daily with a weak solution of carbolic acid. During the treatment, if the cavity ceases to diminish in size, other injections may be substituted.

In cleansing the cavity, the end of the tube should be placed under water, in a basin, which can be raised to any desired height. The fluid flows into the chest through the siphon and then out by the same means.

Between the visits of the physician, the end of the tube may be left under water, to which a little carbolic acid has been added, or it may simply be bent upon itself and closed, by slipping over it the little ring. Though the former method is preferable, the latter will sometimes be found necessary with restless patients. If the latter plan is adopted, the cavity should be cleansed twice a day.

For two or three days, the soft tissues in the intercostal space grasp the tube firmly and keep the cavity hermetically closed, but at the end of this time, the tube becomes loose in the opening through the chest walls, so that air would enter, or the tube would fall out, were it not for the piece of rubber, which was placed on it when the canula was withdrawn.

This rubber not only acts as a perfect valve, when held by the elastic band, to prevent the ingress of air, but it also holds the tube in position, with sufficient firmness to prevent its being withdrawn by any ordinary force. The tube may be still further secured, if thought best, by a bandage placed about the chest.

The slit in the elastic should be long enough to allow some movement of the bandage without traction on the tube.

The force with which the fluid flows into the cavity may be perfectly regulated by the height of the column of water in the siphon. As soon as the cavity becomes slightly distended, the patient will complain of uneasiness or pain in the chest, and then the tube should be at once lowered, to stop the flow.

As healing progresses, the size of the cavity may be accurately determined from day to day by the amount of water required to fill it.

This has the advantage over methods usually recommended

of occasioning but a trifling wound, and consequently slight constitutional disturbance from that cause—of preventing the entrance of air—of simplicity in the operation and convenience in after treatment—of painlessness after the soreness from the puncture has subsided, and of comfort and neatness for the patient. It is nearly as simple as paracentesis with the aspirator, and is attended with little if any more danger to the patient.

It might be used in those unyielding cases of chronic pleurisy with serous effusion, where the cavity rapidly refills after paracentesis.

In illustration, I subjoin the reports of two cases operated upon by this method.

CASE I. A patient of Dr. P. H. Matthei. Seen in consultation with Drs. Matthei and E. Ingals, December 1st, 1876. E. G., aged four years, was attacked with rheumatism four weeks ago. A few days later complained of pain in left side, evidently of a pleuritic character. To-day the patient complains of severe pain in left side of neck; he has lost considerably in strength and weight,—appetite poor, thirst considerable, digestion fair, bowels loose, urine scanty at times and profuse at others. Pulse small and quick, 130 per minute; respirations, 40. Frequent hacking cough with no expectoration. Curvature of spine with immobility of left side and bulging, especially of left mammary region. Flatness over greater part of left side, with feebly transmitted respiratory sounds. Apex beat of heart within half an inch of the right nipple. Just below the nipple the left side measured ten and five-eighths and the right nine and five-eighths inches. Introduced needle of aspirator near the angles between the eighth and ninth ribs, and withdrew five and a half ounces of thick yellow pus, when coughing came on and the pus ceased flowing; although the cavity was not empty the needle was withdrawn. After the operation the apex beat could be felt about three-eighths of an inch nearer the sternum. Soon the child became quiet, and he subsequently did well for several days. The severe pain in the left side of the neck had been entirely removed by the operation.

Dec. 7th. Pain in neck has returned. The patient very restless and suffering from dyspnœa. Punctured the chest again near the same point as before and withdrew eighteen ounces of healthy pus. A few drachms of blood flowed with the last of the pus. The impulse of the heart changed in consequence of operation from a position near the right nipple to the left side of the sternum. The respiratory sounds became quite distinct in left lung. The child did well for two or three days after the operation.

Dec. 12th. Respirations, 44; pulse, 150. Patient very weak. Apex beat near right nipple. Performed paracentesis near the point of the last puncture and withdrew fifteen and a half ounces of pus. The heart returned nearly to its normal position and the left side which had measured eleven and one-fourth inches before the operation, measured only ten and three-fourths afterward.

Dec. 21st. The patient did well for four or five days after the last operation, but for a few days he has been losing; suffering greatly from dyspnœa and pain. During last night he took, beside several grains of bromide of potassium and several drops of laudanum, a grain and a half of morphia in doses of a quarter of a grain each, yet he did not sleep. There is œdema of the left side of the chest as low as the last rib where it abruptly terminates. The struggles of the child in opposing another operation, caused the wound of the last puncture to re-open. From the opening, thick pus slowly escaped.

In the afternoon of this day, I operated in the method described, excepting that air was allowed to enter the chest. The aspirator was applied after the dressings had been secured and the air withdrawn with the remaining pus. Twenty-three ounces of a thick, greenish-yellow pus were obtained. About half an ounce of blood flowed after the aspirator had been attached. The pleural sac was not cleansed in this case, until the following day, afterward it was washed out every day with a one per cent. solution of carbolic acid. The tube was bent upon itself and kept closed, excepting morning and evening when it was opened under water and the pus allowed to flow

out. The pus remained more or less bloody for several days. The cavity was rapidly obliterated so that in two weeks it would hold only two ounces. Three weeks after the operation it was noted that the child had been suffering for several days with rheumatic pains, and that he had just passed through an attack of varicella. Not more than half a drachm of pus had escaped morning and evening for several days, and the cavity would not hold more than two drachms.

Jan. 13th. The bandage having been removed, the tube fell or was crowded out to-day—cavity entirely obliterated.

Four weeks after the operation, the patient was discharged by Dr. Matthei as cured; the opening in chest was healed, the lung expanded freely, the impulse of the heart was normal and there was no dyspnoea. A month later there was slight curvature of the spine and depression of the left side, but after a few weeks the child presented a normal appearance of the chest and was in perfect health. During the treatment from two to three grains of quinine were administered daily, and Dover's powder or morphia were administered when needed to relieve pain and secure rest.

March 18th, 1877. CASE II. Mrs. P., aged 30, mother of two children, youngest about three years of age. Has been sick about eighteen months. From the history, seems first to have had pleurisy. Was attended for several months by regular physicians, and then fell into the hands of a quack, who maltreated her for nine months.

The patient is very feeble; harassed by an almost constant cough, and frequently expectorates a considerable quantity of grayish white sputa, of a nummular form. Complains of severe pain in the right side, for which she is obliged to take frequent doses of morphia. Pulse, 118; respirations, 28.

Dullness on right side above fifth rib in front, and above sixth behind. Flatness below these points, and extending one inch higher in axillary region. When lying upon left side a slight degree of resonance extends about an inch lower in the axillary region. Heart one half inch farther to the left than normal. Retraction of right side. On a level with the sixth costal cartilage the sides each measure nearly fourteen inches,

the left may be an eighth of an inch smaller. Left side moves half an inch in full inspiration. No expansion of right side. With the assistance of Dr. D. R. Brower, I administered nitrous oxide gas, and punctured the chest between the seventh and eighth ribs, a little in front of their angles, but as no pus was obtained the needle was withdrawn, and another puncture made about an inch nearer the spine, between the sixth and seventh ribs. From this opening we withdrew six ounces of thick yellow pus. The patient steadily improved after the operation for about three weeks. Twenty-four hours after the operation she was able to sleep comfortably without morphia, as her cough and pain had entirely disappeared. The cough returned in about twelve days, but was not severe. Eighteen days after the operation, slightly amphoric resonance and amphoric respiration were present below the sixth rib, one inch external to the line of the right nipple.

Three weeks after the puncture the coughing became frequent, and the pain returned to the right side. The flatness which had greatly diminished after the operation, became greater than before.

April 15th, four weeks after the aspiration, we again gave nitrous oxide gas, and performed the radical operation as above described, evacuating thirteen ounces of thick pus. We used the aspirator in this case to evacuate the last of the pus; though I now think, it would be better to rely simply on the siphon. One or two ounces of blood followed the aspiration. No air entered the chest. After the pus had been evacuated the cavity was washed out with a weak solution—about one per cent. of carbolic acid.

The end of the tube was kept closed for two or three days, excepting when the pleural sac was cleansed in the morning. Afterward it was placed under water, and constant drainage allowed.

The cavity rapidly diminished in size for eight days, when it would hold only one ounce.

On the evening of the 23d of April the patient, in rising from a chair, accidentally caught the tube and pulled it nearly out of the chest. I was sent for, but finding it impossible to

re-insert the tube, and thinking the cavity would heal before the opening in the chest closed, I removed the drainage tube and dressed the external opening with a carbolized compress. Five days later the following notes were made: External opening healed. Patient has gained four pounds in twelve days, and feels well.

The patient continued improving for six or eight days, following the last entry, and then after a hacking cough, which lasted nearly a day, she was taken with pains in both sides of the chest, and after a few hours the cough became violent. For the following three days she expectorated about a pint each day of the same muco-purulent, nummular sputa as before the operation. At this time there were distinct signs of a pulmonary cavity where the amphoric respiration had been observed three weeks previously, but the pleural cavity from which the pus had been withdrawn was entirely healed. The case is still under observation.

SCARLET FEVER AND THE BOARD OF HEALTH.

(Read before the Chicago Medical Society, May 7, 1877.)

BY HENRY M. LYMAN, M. D.

[Professor of Physiology and of Nervous Diseases in Rush Medical College—Chicago.]

The current epidemic of scarlet fever does not seem to have in any respect added to the sum of our previous knowledge concerning the disease. The same tendency to increased mortality during the coldest months in the year; the same peculiar danger to children before their second dentition; the same malignity in communities which have long escaped the scourge—have all been again remarked. Some persons have tried to connect the unusual mortality with a corresponding uncleanly condition of the city; but I have often seen the city in as bad a condition without any noticeable fatality from scarlet fever. In fact, the portions of the city—on the West side, at least,—

which have this year been comparatively free from the disease, and which have been claimed as examples of the good results of drainage and paving, have during previous years been full of scarlet fever. As far as my experience goes, the disease has, in the better quarter of the West side, during the three years which were closed by the summer of 1876, been endemic until it well-nigh exhausted itself for lack of material. Nor has the weather during the past winter been of a nature calculated to increase the general mortality. Cold of an unusual uniformity, with a remarkable absence of south winds, so that the snow remained on the ground with scarcely any thaw from the first of December till the first of March, producing a degree of atmospheric dryness and purity seldom equaled in this region—such were the characteristics of the winter. Perhaps the only extraordinary condition which might be recognized as widely operative, was the increased pressure of poverty, leading to greater crowding of the population into fewer and smaller rooms during the coldest months of the year; and yet, nearly all the worst cases which I have seen have occurred in families whose residence and habits of life have remained unchanged for several years.

In short, then, the sum and substance of our knowledge of scarlet fever is now just what it was twelve months ago, to wit: Scarlet fever is a disease which is within certain limits communicable from person to person. The contagious element can hardly be considered an aerial poison like malaria or like the poison of measles. It rather resembles the poison of typhoid fever in its limitation to a narrow sphere about the patient; yet there is no satisfactory evidence that it can be diffused by water in any way comparable to the diffusion of typhoid fever by liquids. It seems to occupy a rank between typhoid fever and syphilis, so far as its communicability is concerned. Consequently we find that it can under favorable circumstances be prevented from spreading through a family. I have never known it to pass from one house to an adjoining dwelling. I have never carried it home to my family, or to the families of any of my patients while attending even the most malignant cases. I have known a physician to get out of bed in the night, step across the hall into the room of a

family under the same roof, where children were dying with the most virulent forms of the disease, and, after administering to their necessities, return immediately to his bed without communicating the disease to the child who was always his bed-fellow. In like manner, I have often seen the disease limited to the inmates of a single apartment in boarding-houses where several families lived under the same roof, and in tenement houses, and even in private residences where it was possible to isolate a child from the other members of the family. The contagious principle is not sufficiently aerial to diffuse itself through a large house; it must be actually carried from room to room in order to infect an entire domicile. In this respect my experience during the past year is identical with that of previous years.

As for the value of the ordinary disinfectants, I have no decided conviction. Their use is sometimes coincident with the restriction of the disease; but I have also seen it spread through a family in spite of their diligent use. Whether disinfectants may not be serviceable in prevention of contagion by transport of articles which have been in contact with the disease, is still an open question; consequently, I should incline to the safer side, and would join in recommendation of disinfectants. They certainly can do no harm.

As for the mortality of the epidemic, it has certainly been large. During the past twelve months I have lost six cases—eleven per cent. of the total number treated. Of these, five fatal cases occurred during the month of January—the month when the greatest mortality was to have been expected—and with but one exception they were children for whom any acute disease was to have been dreaded. Eleven per cent. is a good round figure; but when I include a series of years in my inquiry, I cannot consider scarlet fever a very mortal disease. Until the present year, a most insignificant per centage of fatal cases of scarlet-fever has been my usual experience—it was two per cent. last year—and I do not believe mine differs, in this respect, from that of many other physicians.

In this connection, it is much to be regretted that we cannot arrive at a satisfactory conclusion respecting the mortality

rate of the present epidemic. The percentage of deaths from scarlet fever as compared with the mortality from other causes is easily obtained; but one need not look far between the lines of the recent report of the health commissioner to the Society of Physicians and Surgeons, to discover that he is not in possession of full returns from the epidemic. In view of the general interest of the community in the matter, and of the remarkable unanimity with which the members of the medical profession rallied to the support of the Board of Health, it is worth while to inquire into the cause of this undoubted fact.

When the physicians of Chicago assembled in council, on the 27th of Jan. 1877, their committee proceeded to report a document, copied at least in part, from the bulletins of the Boards of Health in Boston and New York, and containing a very judicious address to the public respecting scarlet fever and its general management. The report also contained a statement of "What the Authorities ought to do," to the effect that they should,

1. "Require a report to the health department of every case of infectious disease.
2. "Officially inquire into the origin of disease in each case.
3. "Take such measures as will prevent communication between the infected location or house and those not infected."

Excellent so far. Nothing could be more thoroughly calculated to increase our knowledge of the *statistics* of scarlet fever, to say the least. But then the committee went on from generalities to particulars, of which the very first was most ingeniously calculated to neutralize in great measure, the previous recommendations;—they advised that upon every infected house a "placard" should be placed as a "warning to the public."

This novel device cannot have claimed for it any experience of its utility as a means of prevention of scarlet fever. It is a recent suggestion which originated as a mere proposal in the town of Christiania, Norway, and has been caught up without much consideration by some of the closet philosophers of the latest period. At first sight, the recommendation seems very

plausible. Mark the house which contains scarlet fever; everybody will avoid the spot; the disease will therefore be limited to that dwelling, and the epidemic will soon die out. But in all natural sciences *a priori* speculations are of very little value. Experiment is the only test of the value of an hypothesis; consequently, I have watched with no little interest the course of this experiment. I have taken pains to make inquiries, where I have had no opportunity to make the experiment myself, and my convictions are based upon a pretty wide range of facts; though inasmuch as many of them have come to my knowledge in the shape of confidential communications, I cannot support my position by a citation of authorities and details, such as would be desirable in a strictly scientific document. In conversation with other physicians, I have often remarked a species of uneasiness with regard to the subject of scarlet fever, which is not without significance, and I presume that I have sometimes laid myself open to the suspicion of being a spy from the health office. If such be the case, I hope this paper may relieve me from any such reproach.

What, then, seems to be the practical result of the experiment? A very wide-spread and deep feeling of opposition to the display of placards upon infected houses. This feeling, of course, has not yet invaded the whole community, because only a small portion of its families have thus far experienced the infliction of the nuisance in question. But in almost every case of its experience, the feeling is, to put it in the mildest way, a feeling of profound dissatisfaction. In the first place, the mere sight of a placard is often sufficient to throw a whole neighborhood of nervous ladies into paroxysms of most painful excitement. Strong men, even,—hard-hearted fellows of whom such a thing would never have been predicted—have told me that they could not endure the shock of meeting such a spectre at their door on returning home from business in the evening. There is no doubt that the maintenance of such a notice upon a house is often a very considerable addition to the sufferings of an especially afflicted family. Such feelings should not be disregarded without sufficient cause. In dealing with the community, as physicians, we have

to deal with three great classes of people: Those who are well off in this world's goods, those who live in their shops where their business is conducted, and those of the laboring class who live in the little cottages which are so numerous in this city. Let us see how these different people regard the matter.

The better class of citizens who dwell in large houses with several apartments, are generally amenable to reason of a certain kind. Some of them are exceedingly timid, over anxious and hysterical about sickness. They readily comprehend the current theories about the communicability of scarlet fever, and will do anything rational to prevent the spread of the disease. They obey the counsels of their physicians, and can easily be led to overcome their instinctive repugnance to that degree of publicity, etc., etc., which is inseparable from a public notice of sickness in the house. Were they alone to be taken into consideration, the practice might easily be defended. Mrs. A. drives out, on a fine afternoon, to call upon her dear friend Mrs. B., who lives in a distant part of the city; sees a scarlet fever notice on that lady's door, and, wheeling short about, lashes her horses in the direction of home, with a heart full of gratitude to the board of health, which had saved her from running right into a whole hornet's nest of scarlet rash. A very pretty story—much affected by the partisan of the prevailing fashion; but here is the other side, drawn from my own observation. Scarlet fever occurs in the person of a small child—one of a large family in an elegant residence. Upon the mother—a feeble lady in poor health—devolves the principal care of the patient; but the house is large, the child is isolated from the rest of the family, the servants are well trained, and everything moves on quietly until the fourth or fifth day of the disease, when a sanitary inspector makes his appearance and proceeds to erect his card against the house. This is the signal for a general insurrection among the divinities of the kitchen. "What is the trouble, didn't you know we had scarlet fever in the house?" "Yes." "Are you afraid of it?" "Not a bit." "Why, then, do you insist upon leaving us now?" "Won't stay in a house with *that thing* on the door." And away they go—the outraged goddesses. *Vera incessu pat-*

vit dea. "Well," says the crest-fallen doctor, when he hears this sorrowful tale, "can't we find somebody else to help you? Girls are plenty now." "Yes," replies the disheartened mother, "there are plenty of girls, but they won't, one of them, come near the house while that card is on the door."

Now if there is any one thing in social life which is a little meaner than anything else, it is the doing of that which will take from the invalid mother of a large family, the help of her servants at a time when she most needs their assistance. You can all imagine the feelings of a kind hearted physician when he finds that he has played this scurvy trick upon one of his best patrons and friends. Very naturally, a paper placard is not a very durable affair under such circumstances, and no one but an ass would be too inquisitive regarding the character of the elementary forces which disintegrate such inscriptions.

Let us pass to the other extreme of the social scale.

Sickness has raged for several weeks among the "nine children at the breast," in a single-roomed shanty on Ashbox street. At length, it is decided by a council of toothless crones, that Dr. Robinson shall be invoked. He pronounces it scarlet fever, and a sanitary official proceeds to conceal the greater part of the front of the edifice with a "warning card." He then creates in the house a vile odor, with certain compounds, (an act which, however, should be pardoned when we consider who he is and whence he comes), informs the surrounding population that Dr. Robinson is a fool, who knows nothing about the proper treatment of scarlet fever, and disappears—forever, let us hope. Immediately there is an outbreak in the neighborhood, and the health commissioner is mentioned in terms of anything but flattering respect. The victims of his administration curse without stint, while the spectators simply laugh him to scorn, and the "d—d doctor" who reported the case, comes in for a full share of abuse. The hard horse-sense of the common people, penetrates right through the transparent pretense of limiting the spread of scarlatina by any such flimsy sham as a paper card. It is the old story of Mrs. Partington, keeping out the Atlantic ocean with a broom, as long as a ceaseless tide of children and other living creatures continues

to ebb and flow in and around the infected dwelling. "If the disease is communicable, how can you shut it up with a card? If it is so contagious as you say, why don't it spread through all the houses around?"

The consequence is that the health officers and medical men generally, sink in the estimation of the great majority of the public, which becomes correspondingly callous and indifferent to the well-considered and certain utterances of the same authorities in other matters, about which there can be no difference of opinion. This point reached, the officials cease to control the course of events; they become simply the dust of the whirlwind. When the health commissioner is mentioned in connection with scarlet fever, the common people laugh, and say, "Oh, yes, he had to do something to earn his money, and probably he couldn't think of anything else but to stick up his card around the city." Such trifling with sacred matters is to be regretted, and its occasion should not be lightly afforded.

One more class remains to be considered—the small shopkeepers and other people who live in the houses where they toil for their daily bread. This is the class to which the great majority of physicians belong, and it therefore forms the portion of the community for which our sympathies should always be most easily aroused.

By this class of people the matter of placards is regarded not merely with disgust or derision, but with absolute terror. For such a person a scarlet fever notice means loss of business, loss of income—very likely, ruin itself. Just consider what might happen to any physician for example. Scarlet fever in the family, a placard on the door for six weeks or two months—longer even, perhaps. The doctor has not been more fortunate than his fellows in the profession. In the best of times he can hardly make the two ends meet, there are so many little mouths in the nursery upstairs. And now comes sickness, and that terrible notice on the door, warning people to beware of that house, to avoid its inhabitants, to keep them far from the rest of mankind for no one knows how long. That means a forced contribution of two hundred, five hundred, or a thousand

and dollars, taken from the pocket of a brother mortal who had hardly the where-withal to keep soul and body together in the best of times. Is this right? Surely not without some most serious cause for such conduct. Is it necessary? Let us see.

I once had scarlet fever in my own family, and that, too, when I lived in a little bandbox of a house where the isolation of the sick could only be of the most imperfect character. I saw the opportunity for an experiment, and I performed it without hesitation. Taking no other precautions but those suggested by the ordinary habits of personal cleanliness, I went about my work as usual. My practice was excellent; there were frequent calls from patients at my house, and I was constantly employed. I took pains to watch the families and the people with whom I was thus brought in contact, and in not a single instance did scarlet fever occur among them, nor did any of the ladies whom I attended in confinement manifest the slightest puerperal accident. This experience is by no means uncommon, and is sufficient to prove the gratuitous character of the assumption that scarlet fever necessarily converts a house into a centre of infection which must be shunned like a plague-spot. The successful results of confining the disease to a single room by isolation of the patient, show that an entire building need not be considered dangerous because there is scarlet fever in some portion of the edifice. Consequently, when the disease appears in a family under such circumstances, the board of health, instead of doing its best to ruin them financially, should bend its efforts to the work of showing the unfortunate parties how to make themselves as harmless as possible by the use of disinfection, and by the seclusion of the sick away from the portion of the house which is used for the transaction of business. It is not right to insist upon measures which will deprive a man of his livelihood, on the ground that it is for the good of the public, unless that public is willing to take in addition the only step consistent with justice, and to assume the support of that man as long as he submits to the infliction. "But," say the advocates of the crimson-card, "would you not place a card upon houses in which there is small-pox, and is it not as necessary

in scarlet fever as in small-pox?" Certainly, I reply, I would placard a small-pox case, because there is no degree of parallelism between the two diseases. Small-pox is a disease which can easily be prevented. In a civilized community it only occurs as the result of ignorance or carelessness,—two vices which merit all the punishment which can grow out of the disease and the isolation which it entails. Small-pox, moreover, is caused by a rather volatile poison which impregnates an entire dwelling, and a considerable atmospheric zone around it. But such is not the case with scarlet fever. Only a limited sphere is occupied by its infection, so that a house is by no means necessarily to be avoided because it may in some apartment contain scarlet fever. The disease is, also, one that cannot be prevented by any known measure, like vaccination, which is within the reach of every one. Families afflicted with scarlet fever, are therefore to be regarded with sympathy and compassion instead of being made the objects of punitive measures. And since the disease is only seldom dangerous to life, it cannot be worth while to attempt on its account to revive in the community the horrors of isolation and desertion which before the days of vaccination made an epidemic of small-pox such a terror to mankind. It is the dread of such isolation which causes much of the repugnance which people feel in connection with these obnoxious placards. Already, the first question is, "Must we have a card on the house?" Already I have been forewarned that if scarlet fever should invade such and such families, their choice of a physician would be determined by his conduct in the matter of reporting scarlet fever to the health office. Already there is in many quarters a reluctance to call in medical aid, for fear of the inevitable red card. More than once I have been consulted at my office about patients for whom a visit was not desired, but which I had reason to suspect were cases of scarlet fever. And this is only the beginning of the storm of dissatisfaction which is gathering, yet so enamored are the officials with their little two-penny game of cards, that I am told they will even fly at a case of measles, and cover it all over with pasteboard. This is certainly the *reductio ad absurdum* of the whole thing.

Nevertheless, all these inflictions might be justified, and might be tolerated by a long-suffering public, if it could be shown that they accomplished a single good result. On the contrary, there is not the slightest evidence of any value to show that the progress of the epidemic has been in the smallest degree affected by these odious notices. They have only served to irritate the public and to annoy physicians. This is the principal cause which has operated to prevent the health officers from getting full returns from the epidemic, so that one of the finest opportunities for the study of the disease has been only partially improved. The officials have thus by their conduct laid themselves open to the charge of being urgent about trifles, and of being negligent in matters of real importance. The rank and file of the profession are dependent upon the good will of their patrons, and they cannot afford to take sides in behalf of a measure which is both unpopular and useless. Consequently, I find everywhere great caution in the matter of diagnosis. The prudent physician makes a second visit before he communicates with the board of health. In doubtful cases, the patient gets the benefit of the doubt. Harmless rashes are of more frequent occurrence. Even the most enthusiastic admirers of the placard confess to having cases of roseola and the like which they do not report at the health office. We are all familiar with the fact that certain physicians always magnify their cases. Under their care tonsillitis becomes diphtheria, while intestinal catarrh assumes the dangerous form of Asiatic cholera. But now the tendency is all the other way; the endeavor is to minimize everything which looks like scarlet fever, so that it really begins to seem as if the current epidemic would finally resolve itself into a fiery cloud of red-gum and prickly heat. In point of fact, so far as any good result is concerned, the whole matter of placarding scarlet fever is, to use the words of one of our oldest, wisest, and best known physicians, *mere boyish play*.

In all these criticisms, however, I do not wish to reflect injuriously upon the worthy gentlemen who discharge the duties of the health office. They have honestly attempted to

carry out the recommendations of the committee of physicians. They have had the courage to undertake the performance of an exceedingly unpopular experiment, and we should blame not them, but the feather-heads who originated the device. Our commissioner of health has displayed a laudable courage, and it is not too much to hope that he will also display an equally laudable discretion. A little patience, a little ingenuity, a little study of human nature, will accomplish far more good results than can ever be secured by harassing the profession and the public with law-suits and fines. We are too apt to admire the resort to force as a remedy for evils which we have not wit enough to control. Just as it is the most natural thing in the world for a cheerful doctor of divinity, surrounded by a fashionable congregation, to insist that the law should compel every citizen to pass his Sundays in a clean shirt, with a pitcher of cold water at his elbow, and a copy of the *Northwestern Christian Advocate* in his hand,—so it is exceedingly easy for a comfortable official, meditating in the seclusion of a governmental bureau, to think that everybody ought to overcome his natural feelings, and to submit without a murmur to any new-fangled experiment which certain hard-hearted doctors may see fit to try upon him. People who have been accustomed to ecclesiastical or military methods of administration will readily fall in with this way of thinking. But by the mass of mankind such methods have always been justly deemed vexatious, ineffectual, intolerable. If anything be true of our American institutions, it is their foundation in an abiding protest against priestcraft and military domination. No methods of procedure which ignore this fact can for a moment stand in the face of public opinion. Hence it behooves our servants if they are wise, to find out where they stand, and to BEWARE, lest they bury themselves deeper than the ninth hell of the Inferno.

THE LIMITS OF THE OPTICAL CAPACITY OF
THE MICROSCOPE.

BY LESTER CURTIS, M. D., CHICAGO.

Two papers, one written by Professor Abbe, of Jena, and the other by the well known Professor Helmholtz, on the limits, beyond which, from the nature of light, it is impossible to carry the magnifying power of the microscope, with any profit, are at present attracting considerable attention among those interested in the use of the instrument. It has been suggested to me, that a condensed statement of the results arrived at by these investigators, might be of interest to those readers of the *MEDICAL JOURNAL AND EXAMINER* who might not have access to the original papers.

The first difficulty that stands in the way of a very great amplification of an object, is the difficulty of obtaining sufficient illumination to render it clearly visible. The opening through which the object is viewed in a microscope, diminishes just in proportion to the magnifying power. The size of this apparent aperture has nothing to do with the size of any of the glasses of the microscope, and only varies with the changes in the magnifying power of the instrument; it makes no difference in what way this magnifying power is obtained, whether by the use of higher-power objectives, or higher eye-pieces, or by lengthening the tube of the instrument. The only circumstance that modifies the size of this orifice, is what is called the angular aperture of the objective, an objective of a small angle having a smaller field than an objective of a large angle. The size of this orifice can be seen by arranging the microscope as for an ordinary observation, and then removing the eye a short distance from the eye-piece and looking down it. One who has never tried it before, will be surprised at the exceeding minuteness of the orifice through which the object seems to

be seen. As long as this orifice is no smaller than the pupil of the eye, the image seen in the microscope suffers no loss of brightness by its increased magnification; when, however, the orifice through which the object is viewed becomes smaller than the pupil, the image seen loses in brightness.

Supposing the diameter of the pupil to be about 1-12 of an inch, and the objective to have an aperture of 180 degrees, the amplification, to be equal to the pupil, would be 166.7.

The brightness of the image, as the magnifying power increases, diminishes in the following ratio:

For an amplification of 166.7,	brightness	1.
" " " " 333.3,	"	1-4.
" " " " 500.0,	"	1-9.
" " " " 666.7,	"	1-16.

It will be easily seen that for the very great magnifying powers sometimes used, there must be a great diminution of the brightness of the image, notwithstanding the appliances that are used to increase the light; and finally there must be a limit beyond which the amplification can not go, from the fact that the image will be so dim as to prevent its structure being made out.

Along with this decrease in the size of the beam of light admitted to the eye, is another difficulty, and that is the production of shadows within the eye itself. It is well known that if a narrow beam of bright light is admitted to the eye in a direction somewhat oblique to its axis, that the shadows of the retinal vessels can be seen. Now, in the case of an observer who is examining an object highly magnified, a narrow beam of light passes into the eye, and the shadows of the retinal vessels thus produced, and appearing as a veil over the object, must, as a matter of course, impair the clearness with which it is seen.

There is still another difficulty connected with this same diminution of the orifice through which a highly magnified object is seen, and that is diffraction. We are all aware that if we look across the edge of a screen at any brightly illuminated object, there appears a narrow shadowy fringe along the edge of the screen. This fringe is called diffraction, and is always

found where light passes by the border of any object. If we place two edges so closely together that these diffraction fringes overlap, and look at any bright object through the opening, we shall observe a great impairment in the clearness with which it is seen. A convenient experiment is to make a small hole in a card, which is thick enough to be quite opaque; or to scratch a fine line on a piece of glass which has been covered with some black varnish, or covered with turpentine and smoked; and then to look through the hole at a printed page, upon which a strong light has been thrown; it will be seen that the letters which were to be seen with the greatest ease before, can now be scarcely read at all. The smallest aperture through which an object can be seen, without an overlapping of these diffraction fringes, and a consequent impairment of the image, is about one-twelfth of an inch. As we diminish the orifice, the details of the object become more indistinct. Now this diffraction occurs around the edges of the orifice, through which we look at images in a microscope, in exactly the same manner that it does around the edges of the orifice in the card, through which we looked at the letters of our book, and when we come to the higher magnifying powers, the orifice becomes exceedingly small. Supposing that the angular aperture of the glass is 180 degrees, the orifice through which we look when the object is magnified 1000 diameters is 1-50th of an inch, for 5000 diameters it is 1-250th of an inch. The impairment in the clearness of an image, seen through such holes can easily be learned by trying the experiment of looking at the flame of a lamp through a hole of that size.

Another and more serious difficulty yet remains to be considered, and that is the modification which the light undergoes in passing through the object before it reaches the microscope. If the details of an object examined with the microscope, are not less than 1-750th of an inch apart, the image of the object is seen in exactly the same way in a microscope that one would be in a telescope, and the image seen can be relied upon as being an accurate representation of the object; but, if these structures approach closer than this distance, a certain part of the light suffers a change by diffraction, just as the light pass-

ing through the small hole suffers diffraction. When the details of the structure approach to within the 1-2500 of an inch of each other, all the light passing through the object becomes diffracted. In this case its direction is changed, and in place of passing directly through the object, the light is spread out into a fan shape, as it would be by a series of minute prisms.

If now we focus the microscope upon such an object as for instance a series of fine lines ruled on glass, and then take out the eye-piece and look down the tube of the instrument, we shall see in the centre of the object-glass, an image of the object. If the lines are no finer than 1-750 of an inch apart, we shall see nothing else than a true image of the object, but as the lines grow finer, we shall begin to see colored spectral images on each side of the true image, one color after another appearing, as the lines grow finer, and when the lines reach a fineness of 1-2500 of an inch, we shall have a complete series of spectral images extending to the right and left of the true image, beginning with the violet nearest to the true image and extending to the red farthest away. The distance of these spectral images from each other and from the true image, varies inversely, as the fineness of the lines; if the lines are not very fine the colored spectral images will be close together, and the finer the lines the farther apart will be the spectral images. If now we take out the eye-piece and put a diaphragm down the tube of the microscope, just behind the object-glass, which cuts off a portion of these spectral images, and replacing the eye-piece examine the object, we shall begin to lose in the clearness of the appearance of the image. If we put in a series of diaphragms which cut off one after another of the spectral images, some of the details disappear with each one of the spectral images which is cut off, and when the diaphragm is small enough to cut off all the spectral images, all the details disappear and the structure appears a blank. It is necessary, therefore, in order to make out any of the details of an object, that at least one spectral image shall enter the object-glass with the true image, and, if the object-glass has not angular aperture enough to take in these two images, no structure can be seen, however great the magnifying power that may be employed. The

value of angular aperture is not, therefore, that it allows great obliquity of light to be used, which causes light and shadow, and so shows surface markings, but because it enables the objective to take in these spectral images, which are caused by the most intimate structure of the object. Another conclusion from this is, that when the details of an object are so fine as to cause a dispersion too great to be taken in by any object-glass, the limit of possible vision is reached. This limit for an objective of 180 degrees of angular aperture, used with light, whose direction is very oblique to the axis of the instrument, is equal to one-half the length of a wave of light. With the use of the ordinary mixed white daylight, this limit would be 1-92000 of an inch. By the use of blue light alone, this distance might be reduced to 1-122000 of an inch, which is the size of the smallest object that can, under any circumstances, be seen by a microscope theoretically perfect.

There are some other points that may be brought out by the use of these diaphragms. By cutting off some of the spectral images, intermediate between the true image and the outer spectral images, the lines can be apparently doubled or quadrupled in number. In objects marked with lines crossing each other at various inclinations, many different appearances, all apparently clearly defined, can be produced by cutting off some of the spectral images, by diaphragms of various kinds.

According to these investigators, therefore, we have already reached the limit of the magnifying power of the microscope; no microscope can ever be made which will give a useful magnifying power greater than some now in use; indeed, Professor Abbe thinks that a magnifying power of seven or eight hundred diameters is all that can ever be used with profit.

Robert's lines ruled upon glass at a distance of 1-112000 of an inch apart, have been seen, and that is as near the theoretical limit as we can ever expect to attain.

Finally, according to these investigations, we must revise the opinions we have had in regard to the details of the structure of many minute microscopic objects, and confess that there is no certainty that the image of them which we see in the microscope represents their structure truthfully,

It may be well to mention, however, that in one or two well authenticated instances, objects appear to have been seen finer than the limits considered possible by this theory.

Clinical Reports.

RUSH MEDICAL COLLEGE CLINIC.

Services of PROF. MOSES GUNN.

(Reported by EDMUND M. LANDIS, M. D.)

Fibroid Tumor in the Neck.

Julius O., German, aged 45, agent. The patient, a large muscular man whose previous health has been good, first noticed about six years ago, a small swelling in his neck, which has steadily grown invading the pharynx, interfering with deglutition, and embarrassing his speech. Does not remember when it first involved the throat. Has no pain, except on the top of the head. No hereditary taint. The patient's health has failed of late, as the trouble he has in swallowing prevents him from taking proper nourishment. Rests poorly.

On examination, find that the tumor projects more into the throat than externally. Suffocation is prevented by the connection of the tumor with the hard, and unyielding parts outside. The impression is that we have a fibroid tumor, on account of its age, and because in their later histories, malignant tumors in this locality usually run a more rapid course. Extirpation impossible, as the dissection would include the large vessels and important nerves of the neck. The question of a partial extirpation, in order to prevent suffocation, may present itself at a later period. Do not advise an operation, except in that event.

Extensive Necrosis.

Ed., Irish, aged 9½, a poorly nourished lad, who caught cold while skating, in January last, and came into the house com-

plaining of being sick, when he was taken with fever, attended with great pain and swelling in the feet and limbs. He was supposed to have inflammatory rheumatism.

After being sick two months, the swelling in the right foot terminated in two openings, one on the inner aspect near the ankle, and the other over the metatarsal bones. Since then other openings have appeared, as follows: one on the left femur, near the condyles, and one on the right tibia, just below the patella. There is a small abscess, pointing over the left ankle.

Examination shows that the right knee joint is ankylosed at a right angle. On probing the sinuses, find that but one leads to dead bone.

This case presents an opportunity for studying the disease in its first stages; the previous cases before the clinic have generally been old ones, which, as the ophthalmologists say of cataracts, were fully "ripe." In necrosis the term "ripe" means that the diseased bone is detached, and, possibly, covered with new bone.

This boy, from unusual exercise, became heated and fatigued to such an extent, that he was rendered extremely liable to the effects of a cold, and consequently to take on inflammatory action. The case was more asthenic in its character than usual, having existed two months before an opening from suppuration appeared. On probing the different sinuses, find but one piece of dead bone, the other points of diseases not being so far advanced.

The bone not being ready for removal, advise that the child be allowed to wait two months, when it is thought that his case will be ready for an operation.

In the meantime his health is to be improved by generous diet, and cod liver oil.

Malignant Tumor in the Neck.

John C., Irish, aged 33, laborer. The patient, a robust, healthy man, who had not been injured, noticed about three months ago, a small tumor of the size of a hickory nut in the

tissues of the left side of the neck at the angle of the jaw. Could then distinguish its borders. It increased in three days without discomfort to its present size, (three or four inches in diameter.) Suffers pain only at the top of the head.

On examination, find that the tumor projects considerably into the throat. The tumor was aspirated last week by Dr. Walter Hay, with negative result. On probing several times with the exploring needle, which was finally carried into the center of the softest part, a drop or two of purulent matter was obtained. Another introduction of the needle was not so successful. From this think that there is a reasonable hope of the growth suppurating, and thus terminating.

A large poultice to be applied, which is to be kept constantly warm and moist.

April 21st. The tumor has increased in size, and is rapidly progressing, and the patient's health failing.

On examination, cannot get the fingers into the throat as before, and find that the patient has difficulty in opening the mouth. On introducing the exploring needle into a soft spot, obtain only blood. The rapidity of its growth, its semi-fluctuation, the absence of suppuration, and the failing strength, lead to the supposition that it is a malignant infiltration.

It is not a case for operative relief.

Chronic Synovitis.

Mr. D. S. B. American, aged 53, commercial traveler. The patient, who is a large, well-nourished man, sprained his left knee over thirty-eight years ago, after which the knee became painful and would occasionally swell, though its use was not materially interfered with. Sometime afterwards he went to New York and was treated by Dr. Parker for synovitis, who kept him confined to his bed for a year and a half; he was probably cured, as he then went into the army and served three years. Towards the close of the service he again sprained the knee, from which time the present difficulty began. In August of 1870, a swelling or abscess formed on the side of the knee,

which opened, discharging pus and synovial fluid. Since then the knee has swelled and opened on four different occasions.

On examination, find the knee painful on pressure, somewhat enlarged, and the joint apparently ankylosed.

This case shows the persistency of these knee joint affections. Just what the condition of the cartilages of the joint cannot be said. Have seen cases where the cartilages of the joint were completely degenerated and destroyed, that had never opened, but don't think that the same condition exists here, although the disease is evidently in the joint.

The limb and knee are too good for an operation, so advise the imitation of nature by immobilizing the joint, and recommend a leather splint for that purpose.

Extract from Notes of Obstetric Practice in the Chicago Hospital for women and Children since its Opening, May 8th, 1865, to May 8th, 1877.

IN CHARGE OF MARY H. THOMPSON, M. D.

The notes of 631 obstetric cases are obtained from what is left of the records after the "Great Fire," in 1871, and of those who have been treated since.

Of this number, 378 mothers are noted as multiparæ, and 116 primiparæ; the condition of the remainder is not recorded. The presentations are recorded in 425 cases; *two* were hand and foot; *two* were head and cord; *one* cord and foot; *two* were cord. *Six* were face; *one* breech and hand. *Six* were breech; *four* were foot. *One* was knee; *one* was placenta; *thirty-nine* vertex, and the remainder were simply noted as head presentations.

Accidents to women were as follows: *Two* died of septiciæmia. *One*, pulmonary consumption. *One*, from a general cellulitis. *One*, from puerperal cellulitis and metritis. *One*, from puerperal metritis. *One*, from shock following turning after woman had been in labor eighteen hours, and membranes ruptured twelve hours. Cord presentation.

There were several cases of septiciæmia and recovery which were not recorded.

There were *six* cases of puerperal convulsions. Two died; four recovered. Of those who recovered, two were bled and given chloroform; two took chloroform without venesection. Chloroform was administered to the two patients who died.

Adherent placenta occurred four times. *Severe hemorrhage* occurred *five times*, but never proved fatal. *Prolapsus of bladder* occurred once. *Thrombus of vagina*, as large as foetal head at term, with spontaneous rupture occurred once. Clots were turned out and the part was compressed by tampon in vagina, and cavity afterward kept disinfected with injections containing carbolic acid. A *tumor* in anterior wall of vagina complicated one labor.

Cystitis came on after labor in one case. *Laceration of the cervix uteri* occurred in *two* cases. *Laceration of the perineum* complicated *fifteen* cases.

Accidents and injuries to children were as follows: *Fifteen* children were dead previous to labor; *four* died from difficult labor; *two* died of tetanus; *one* of marasmus; *one* from premature birth at six months; *one* from hemorrhage at the base of the umbilical cord; *three* from asphyxia; *two* were accidental.

One child, born at the fifth month, lived over one hour. There were two pairs of twins. One child had an hæmatoma.

The placenta was weighed in a large number of full term cases. The greatest weight was 3 pounds, and the least 3 ounces. The umbilical cord was measured, and the greatest length was four and a half feet; the least, four inches.

Two *knots* were found in one long cord.

It is a rule in this hospital, that the urine of every pregnant woman, who comes in previous to labor, shall be examined for albumen. While it was done in a large majority of cases, it was found but a very few times—not exceeding twelve. It always disappeared with the use of dry cups over the kidneys, repeated every fourth or fifth day, and the administration of the tincture of iron, in ten to fifteen drop doses, and if needed, some saline cathartic.

It was found in large quantities in *three* of the cases of convulsions, but these had been admitted during labor, or but a few hours previously.

Reports of Societies.

THE CONVENTION OF THE ILLINOIS STATE MEDICAL SOCIETY.

The twenty-seventh anniversary meeting of the Illinois State Medical Society was held in the Grand Pacific Hotel on the 15th, 16th and 17th of May. On the morning of the first day, the delegates present were called to order at 10 A. M., by Dr. T. D. Fitch, of Chicago, the President of the Society, who requested Dr. J. H. Hollister to offer prayer.

The chairman of the Committee of Arrangements, Dr. James Nevins Hyde, of Chicago, then made a brief address of welcome, and announced the hours of meeting, the order of business, and several invitations to visit the medical and scientific institutions of the city. Dr. J. L. White, of Bloomington, responded to Dr. Hyde's words of welcome, in appropriate terms.

After some time, which was expended in arranging the hours of hearing reports and papers, the President delivered the annual address, of which the following is a brief synopsis:

He hoped that harmony would prevail during the present session, and that it might close with the feeling on the part of all who had attended that it had been a place where it was good to be. He referred to the advantages arising from organizations as a general thing, and thus educed the advantages which accrued from a society like the present. He thought it the duty of every medical man to connect himself with a medical society. He urged that valedictorians should especially impress this, and showed that even those men who in prosperity ignored societies, in time of trouble and in need of protection, recognized the advantages of them. He showed the good to be derived from societies in matters of mutual

protection, in interchange of knowledge and experience. Much could be gained by connection with such a society, and many problems could be solved by joint labors therein, which could not by individual endeavor. He considered it the duty of every physician to take all means to make himself worthy of his high calling, and, referring to the young students, as a class, declared that scientific knowledge could nowhere be better obtained than by associating with other members of the profession. Reciprocal advantages also accrue both to the young and the old practitioners, the former acquiring the practical knowledge of the latter, and the latter securing the theoretical knowledge of the former. He considered that every medical man in the State should feel it incumbent upon himself to come up to the annual feast of medical knowledge. He referred at some length to the society, its origin, the superior character of its early members, the firm basis upon which the organization had been founded. The social advantages to be derived from such a society were invaluable and incalculable, it being the nature of man to seek fellowship and derive benefit therefrom. He considered the present mode of receiving members pernicious. Many persons were elected who never attended the meetings; who were appointed to committees which never made reports; who never paid their dues—which he considered a sacred duty. He maintained that the membership of any person behind in his dues should not be perpetuated beyond two years. The relations of the society towards other similar societies were amicable and pleasant, and the society was treated with deference everywhere. The mechanical management of the society he considered excellent. He referred to the innovation which had been introduced by the appointment of Mrs. Sarah Hackett Stevenson as a delegate to the American Medical Association at Philadelphia, which had been brought about by himself and the late Dr. Freer. He considered that women, whenever competent, should be admitted to membership and representation, and considered that this society had cause to congratulate itself upon having sent the first lady delegate to the general association.

But the angel of death had not stayed its hand during the year; and among those of the society whom it had snatched away, he wished to mention Dr. J. W. Freer, and Dr. G. G. Goll, both of this city. With the former he had had personal acquaintance, but, sparing his own words, would read the obituary notice which appeared shortly after the death of the departed, and gave a somewhat extended résumé of the life of the departed. He declared the deceased to have been a man of clear judgment, noble and upright in his private and professional life. Such men add dignity to the profession which they represent.

Dr. Fitch read the resolutions which were passed relative to the death of Dr. Freer by the medical profession of the city of Chicago.

In referring to Dr. Goll, the speaker declared him to have been a young man of fair talent and bright prospects.

He concluded with thanking the society for the honor conferred upon him in being appointed to the Presidency, and expressed the hope that the lamp of the organization should continue to burn.

Upon motion of Dr. E. Ingals, it was decided that the President's address should be accepted and published.

After the transaction of unimportant routine business, the meeting adjourned till half-past 2 o'clock.

At 2½ p. m., Dr. E. W. Gray, of Bloomington, presented the Report of the Committee on the State Board of Health, together with the petition for the establishment of the same, and the bill as originally prepared. The amendments made in the bill, both as to the powers of the proposed board and the appropriation asked for, were also stated. The report was accepted and referred for publication.

Dr. N. S. Read, of Chandlerville, Chairman of the Committee on Practical Medicine, then presented his report, Dr. E. F. Ingals also reading a supplementary paper.

Dr. E. Andrews, of Chicago, then, by permission, exhibited a patient, a little girl eight years of age, affected with empyema, in whose case paracentesis had been performed. By attaching a tube of a fountain syringe to the drainage tube

inserted, the left thoracic cavity was thoroughly washed out with a carbolated solution.

Dr. I. P. Walker, of Mason County, read a short paper, following this, in connection with the Report on Practical Medicine. The discussion of the entire subject was conducted by Drs. C. M. Fitch, D. S. Jenks, J. S. Whitmire, J. S. Jewell and others.

Dr. J. L. White, of Bloomington, then read the Report on Surgery, of which the following is a synopsis:

The Chairman of this Section confined himself to concise reports of somewhat unusual cases occurring in his own practice and that of neighboring surgeons, and comments of a practical nature, upon the same. He first reported a case of dislocation of the femur, of eleven weeks standing successfully reduced. Also, two cases alike successful, of dislocation of the humerus, of two years duration. From these cases, was urged the importance and propriety of attempting the reduction of dislocations generally, after a much longer time has elapsed than is laid down in standard surgical works as justifiable. He then gave the history of some cases known to him, in which there was in some complete, and in some partial, ankylosis of the elbow joint, going to show the superior advantages of a nearly straight position of the arm over one bent at right angles, and urged the importance of considering the avocation of a patient in dressing the injuries of this joint, when ankylosis was liable to result. A case of severe injury to hand and arm was reported, in which good results were obtained, by keeping the parts for some weeks submerged in hot water, and the advantages of this method of treatment, illustrated and urged upon the profession. The question of gastrotomy was discussed in reference to cases of intussusception, and cases remarked upon where this had been successful. Also some general remarks upon the comparative safety of opening into the peritoneal cavity, taking the ground that the fatal results following this operation have generally been the result of septicæmic poisoning rather than tissue inflammation.

He reported cases of embolism, in which limbs had died from the plugging of the femoral artery, and suggested the

importance of great care in the changing of much enfeebled persons from a recumbent to an erect position. The question of fractures was discussed, and the almost inevitable consequent shortening insisted upon, taking the ground that any unusual attempt to prevent this by excessive extension was liable to be followed by non-union of the fractured bone. In this connection, the profession were reminded of their duty to one another, in regard to giving currency to the idea that no shortening or deformity ought to be the result of fractures. The general use of patent splints and appliances was rather discouraged than recommended. A very interesting and instructive case was reported of death resulting from the use of Esmarch's bandage, and the necessity for the employment of the greatest care and caution in its use, insisted upon. The fatal result in this case was apparently due to the powerful impression made upon the cutaneous nerves, amounting to paralysis. Cases were reported, showing a condition of the system frequently to exist, in which there was no disposition for a wound or injury to heal, cases in which the blood seems to be devoid of its normal plastic properties, and for the relief of which iron is demanded, and in which its use should be perseveringly and persistently employed. The importance of antiseptics in all surgical dressings was insisted upon, and the free exit to all purulent accumulations, in contact with absorbing surfaces. In this connection, the question of dressing stumps, after amputation open, without either sutures or adhesive straps was discussed, and in a general way, approved, though not distinctly recommended. The great superiority of ether over chloroform, on account of its comparative safety, was urged, and the hope expressed that some safe agent might be discovered with which it could be combined, rendering it more prompt in its action, and more easy of administration. Torsion of arteries was claimed to be far preferable to any ligature, when appropriate, and it was insisted that in a great majority of instances it would accomplish all that was required. A photograph, exhibiting the practical working of skin grafting was shown in connection with the report of a case, where great benefit was derived from its employment.

On the morning of the second day, Dr. C. T. Wilbur, of Jacksonville, read an interesting paper on Idiocy. The author said that nearly or quite one-third of the patients admitted to the asylum at Jacksonville, in the course of a very few years were so far recovered as to be permitted to go at liberty and care for themselves. Many, of course, were hopelessly incurable, there being no basis to work on in consequence of mental deficiency. The proportion of the whole number of patients admitted to the institution who were incurable was quite small. It was his opinion that idiots should be treated apart from other patients. They should be kept excluded from lunatics and paupers, as the disturbing influences which surrounded these persons were very harmful. The simpler the lesson and the kindlier the treatment of these patients, the sooner good results will be developed. A thorough industrial training was also indispensable. The work should be light, and never forced upon the patient. The author thought there was as much difference between the trained and untrained idiot, as between the civilized man and the savage. Idiots required at all times kind, gentle treatment, no matter what might be their actions. They were as helpless, mentally, as children, and the same treatment given the child was requisite for the feeble-minded.

The report was received.

Dr. Plym. S. Hayes then read a report on Electro-Therapeutics, setting forth his own experiments with various instruments, and giving details of several cases in which the therapeutic value of this agency was demonstrable.

Dr. E. M. Griffith, of Springfield, next presented the Report of the Committee of Drugs and Medicines. He laid special stress on the necessity to the profession of great care in the use of medicines, not alone for the preservation of their own reputation but the health, and perhaps life, of their patients. There was no legislation in Illinois preventing quackery. This was unfortunate. The manufacture of inferior and worthless medicines was entirely too common, and a stop should be put to it. There should be some means of preventing ignorant and unskilled men from flooding the market with spuri-

ous nostrums. The history of drugs, and the uses and properties of many, were carefully and intelligently reviewed, and the metric system of weights condemned as worthless in the measurement of drugs.

The report was referred to the committee on publication.

Dr. N. S. Davis denounced the practice of countenancing the use of proprietary medicines and the foisting upon the profession of ready-made, worthless, impure prescriptions. So great was his antipathy to patent-medicine men, and to the agents of those popular remedies, that he declared he had refused in his medical journal to advertise such medicines. All that the profession wanted was, that the pharmacist should fill its prescriptions, and not seek to impose on it these ready-made prescriptions. The druggist and the pharmacist had a standard that the profession agreed to as the officinal standard of strength and purity of drugs, and every druggist that dispenses medicine should be held responsible for dispensing it according to that standard, and every physician should direct exactly what combinations he wanted for his individual patients. He thought, in conclusion, it would be a good plan to have the Committee on Drugs and Medicines institute experimental inquiries into the nature of existing drugs, with special reference to pruning the *materia medica*, or at least of reducing the present vague and indefinite knowledge on this subject to a more exact appreciation of what each medicine could do.

Dr. Jewell said that there was still no scientific method for the treatment of hydrophobia, although it had been confidently hoped of late that one was about to be discovered. The doctor called attention to the importance of the subject of the therapeutics of Rest and Position, and made a promise to contribute something on this subject at the next annual meeting.

Dr. A. Hard, of Aurora, spoke of oxygen gas as valuable in therapeutics.

Dr. J. S. Whitmire, of Metamora, related a case that had been reported to him where the excessive use of chloral to produce sleep had rendered the persons who used it insane. Opium was substituted for a time, and a recovery was apparent in three or four weeks.

Dr. W. L. Ransom, of Roscoe, another member of the Committee on Drugs and Medicine, read an interesting paper on *Apocynum Cannabinum*, and directed special attention to its value as a diuretic.

Dr. N. S. Davis followed with some remarks on the same subject. He had found the *Apocynum Cannabinum* a valuable remedy in dropsy from diseases of the kidneys. It acted as a sedative, and, when properly used, was exceedingly valuable as a remedy in all such diseases.

Dr. Johnson, of this city, spoke of the successful employment of Indian Hemp in Bright's disease of the kidneys.

Dr. Bartlett said the root alone of the Indian Hemp was efficacious.

Dr. J. L. White, of the Board of Censors, reported the case of Dr. Barnett, who had made and subsequently withdrawn certain charges against the Macoupin County Society. It appeared from the evidence that he had associated himself with an irregular physician in that county. The County Society expelled the said Barnett, and the latter preferred charges against the Society. The Board of Censors was of the opinion that expulsion from a local society should work expulsion from the State Medical Society. The Board recommended the admission of the following applicants for membership: Drs. Ransom Dexter, S. O. Richey, T. J. Bluthardt, W. Godfrey Dyas, A. H. Foster, Chicago; C. H. Lovewell, Englewood; C. S. Taylor, Rockton; C. N. Cooper, Batavia. The report was adopted.

A report was made by Dr. Charles W. Earle, from the committee on Diseases of Children.

The burden of the report referred to the scarlatina epidemic prevalent in Chicago during 1876-'7. Speaking of the early mortality from scarlatina, he stated that the disease had been epidemic in this city since 1851, the years 1858, '59, '62, '63, and '69 being marked by severe epidemics. The doctor said the epidemic which raged last October had not been as severe as malignant as had been represented. He did not think there was any lack of material to form a malignant epidemic, and with the utter indifference of the profession and the want

of knowledge among the people of the alarming contagiousness of the disease, with the daily papers filled with communications promising immunity if certain medicines were used, he only wondered that our mortality had not been by thousands instead of by hundreds.

Taking as a basis for calculation nearly one hundred reports he had received from physicians, he estimated the entire number of scarlatinous cases as 14,170 during the last sixteen months—the number of deaths being 1,191, or $8\frac{1}{2}$ per cent. Any epidemic with a mortality of less than 10 per cent. was considered very mild, and he cited several epidemics in other countries with 25, 30, and one with a death-rate of 40 per cent.

Tables showing the number of children under the age of sixteen years were given in each ward of the city. In the Fourteenth ward, there are over twenty thousand, and in the entire city, over one hundred and fifty-two thousand, sixty-three thousand of whom were in public and private schools.

At the opening of the schools last year, it was estimated that there were one hundred and fifty infected points. Notwithstanding the favorable condition for the spread of the disease in the schools, only one in every one hundred and twenty-eight persons had died from the disease.

The doctor discussed each ward at some length, giving the sanitary condition of each, deaths from the disease, proportion to population, etc.

In conclusion the speaker said a report of the kind he presented would not be complete without saying something in regard to preventive medicine. Belladonna was discussed fully, both the claims for and against its use being given. He concluded that the general experience in the use of this article had not increased its reputation. The history of carbolate of sodium was given, and the results of its use in the city, presented. In some ninety cases where it had been given to prevent the disease, forty-eight had been affected with scarlet fever.

The report was received, and the society tendered its thanks to the reporter.

The name of L. R. Williams was proposed for membership and referred.

The society then took a recess until 2:30 p. m.

At 2:30 o'clock the convention reassembled in the club-room adjoining the rotunda, and the transaction of business was resumed.

The president called the meeting to order, and asked for the report of the nominating committee. In response, Dr. Earle read the names which were approved.

Dr. J. H. Hollister then read a report on Dietetics and Hygiene of Children.

The doctor divided the report as follows: The subject of infant and childhood mortality. The causes which conspire to this result; viz., Paternal influences, congenital malformations and weaknesses, unhealthy surroundings, contagious diseases, improper clothing and erroneous diet. General observations upon diet, with a variety of formulæ where alien food is needed. Nursery rules for the care and feeding of infants.

The author of the paper said it was with the first of these points he would mainly have to do. Infancy, as the term implies, is that period in which a human being is without a language, and though it may not yet be able to articulate its mother tongue, it has a language that no human heart can fail to understand. It is truly the period of utter helplessness, and yet it has the power to command the purest and the strongest of human agencies. This period of infancy, the period of most delicate development and the embodiment of weakness, is, nevertheless, the period of most intense vital activities and physical changes, and it is during this period that life is imperiled as in no other, and thus we find that one-tenth of the human race die before they are one month old, and more than one-half of the human family before the age of five years. The tables of both England and the Continent confirm this fact as regards the old world, and the same is true of this country as well. We are not able to give as exact data for the country at large, but in the populous cities, where statistics are complete and reliable, the same fact obtains. For example,

in New York city, 26 per cent. of the deaths are those of children under one year old, and 53 per cent. die less than five years old.

In Chicago the statistics are as follows:

Total number of deaths reported during the year	
1876.	8,573
Died under one year,	2,694
Those under two years,	1,038
Those under three years,	518
Those under four years,	396
Those under five years,	245

Total, under five years,	4,891
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The per cent. of the entire mortality being 57.

The speaker said these figures were enough to appall the strongest heart. They not only point to the untold sufferings that went out with these lives, from pain endured, but they remind us of the aching hearts and beclouded homes which have been on every side of us during the past year. The voices of philanthropy and of pity not only ask, "Must this be?" but the economist inquires as well.

These reflections led the speaker to the consideration of the causes which produce such fearful fatality. Some of the cases were obviously beyond the agency of human skill, and while they swell the death rate are not amenable to treatment. Such, for example, are the congenital malformations of infants; such as hydrocephalus and acephalous affections, spina bifida, cyanosis, cardiac, and pulmonary lesions; malformations of the secretory and digestive organs, and failures of development of almost an endless variety.

Hereditary taints are apt to manifest themselves early, and many times these baffle the best directed efforts.

Inherent weakness at birth is a most fruitful source of fatality. The feeble development of the organism is often entirely unequal to the wants of life, and in the unequal struggle it yields that life. A like result of feebleness inheres from the very extremes of human condition.

The doctor reviewed the causes of disease and death in children, dwelling upon the necessity of subsisting children

on food of a proper character, holding that nature's food was the only one which should be used in every instance practicable.

Dr. Matthews then read a paper on the subject of reflex phenomena induced by congenital phimosis, illustrated by several cases.

Both Dr. Hollister and Dr. Matthew's reports were received.

A general discussion then ensued on Dr. Earle's report, and those of Drs. Hollister and Matthews.

The committee on nominations retired for the transaction of business.

On motion, a committee of three was appointed to prepare a circular for general circulation, containing suggestions on dietetics and hygiene of children.

Dr. J. L. Hayes, of Paris, presented a report on ophthalmology.

Dr. Jno. Wright presented a paper on Hæmorrhoids, illustrated by cases.

Dr. E. Andrews, of Chicago, then read a paper, setting forth a new method of producing extension and counter-extension in diseases of the ankle-joint, by means of a leathern and laced splint, covering the dorsum of the foot and reaching over the calf of the leg. The principle of the apparatus was simply equal compression of two cones joined at their apices. The paper was illustrated by a plaster model, with the apparatus *in situ*.

Prof. E. L. Holmes read a paper on Foreign Bodies in the Globe of the Eye.

Dr. Richey followed with a paper on Diseases of the Middle Ear in Connection with Nasal and Pharyngeal Inflammation.

The Society then adjourned.

On the morning of the 3d day, Dr. J. Adams Allen, Chairman of the Committee on Necrology, read the report of that committee, including a paper on the career and labors of the late Dr. Freer, of this city.

At the request of the Convention, Dr. Allen also read a report of the autopsy in Dr. Freer's case, which, with the

committee report, was referred to the Committee on Publication.

Dr. Worrell asked leave to make a slight contribution to the necrological report, and the same was, on motion, added.

The order of exercises was, on motion, suspended. The Board of Censors reported favorably to the election of the following gentlemen to membership: Dr. H. Hatch, New Salem; Dr. G. E. Willard, Chicago; Dr. J. H. Bates, Chicago; Dr. L. R. Williams, Chicago. The Board also made the following request: "There being no evidence to sustain charges preferred against the Jersey county Medical Society, we would recommend that the charges be dismissed." The report of the Board was adopted.

The subject of the establishment of a State Medical Institute was presented and discussed at some length. Dr. John H. Hollister, Treasurer of the Society, reported as follows: Balance on hand per last statement, \$10.82; cash received at Champaign, \$331; cash collected during the year, \$222; cash advanced by the treasurer, \$62.73; total, \$626.55. The disbursements for the year were \$626.55 for various objects of the Society. On motion, the report was audited and approved.

The Committee of Publication reported through Dr. N. S. Davis, and the report was accepted.

Dr. Cook, of Mendota, from the Nominating Committee reported the following nominations of office for the ensuing year:

President—J. L. White, of Bloomington.

First Vice-President—E. P. Cook, Mendota.

Second Vice-President—B. M. Griffith, Springfield.

Treasurer—John H. Hollister, Chicago.

Assistant Secretary—H. B. Buck, Springfield.

Permanent Committees—Board of Censors—M. W. Walton, Ridott; E. Ingals, Chicago; and P. H. Barton, Danville. *Practical Medicine*—C. W. Earle, Chicago; D. S. Booth, Sparta; and J. T. Pitner, Jacksonville. *Surgery*—Moses Gunn, Chicago; W. P. Pierce, Lemont; and David Prince, Jacksonville. *Obstetrics*—T. D. Fitch, Chicago; E. R.

Willard, Wilmington; and Ellen Ingersoll, Canton. *Drugs and Medicines*—N. S. Davis, Chicago; E. P. Cook, Mendota; and William E. Quine, Chicago; *Diseases of Children*—C. C. Hunt, Dixon; Harriet Botsford, Chicago; and Lucinda Corr, Carlinville. *Neurology*—H. A. Johnson, Chicago; T. F. Worrell, Bloomington; and Thomas Gault, Rock Island.

Special Committees—*Otology*—Samuel J. Jones, Chicago. *Neurology*—J. S. Jewell, Chicago. *Ophthalmology*—E. L. Holmes, Chicago. *Electro-Therapeutics*, P. S. Hayes, Chicago; *Malaria*, N. Wright, Chatham. *Fractures of Lower Extremities*—W. L. Goodell, Effingham. *Croup*—H. Z. Gill, Jerseyville. *Throat and Nasal Passages*—J. P. Matthews, Carlinville. *Dysentery*—John Wright, Clinton. *The Chronic and Incurable Insane Poor of Illinois*—R. J. Patterson, Batavia.

Springfield was decided upon as the place of holding the next Convention, and Drs. B. M. Griffith, J. Townsend, and A. A. Patterson, all of that city, were appointed a committee of arrangement. The report was adopted.

Dr. J. S. Jewell, of Chicago, addressed the Convention upon the subject of "The Influence of the Nerves Over Nutrition." Dr. Jewell had spent two years in the investigation of this particular subject, and his paper was appreciated by those present in a vote of thanks.

Dr. S. J. Jones read a paper upon the diseases of the eye and ear, and was thanked by the Convention.

The Convention then passed a vote of thanks to the Committee of Arrangements, the proprietors of the Grand Pacific Hotel, to the local medical societies and members of the profession for entertainment, and to the press.

On motion, Drs. N. S. Davis, E. P. Cook, T. D. Fitch, and Bogue were appointed a committee to revise the constitution and by-laws of the Society.

Dr. C. W. Earle read a preamble and resolution, which recommended that the Chicago Medico-Historical Society be authorized to publish an annual Medical Register of the State of Illinois, agreeably to a resolution of the American Medical

Association. Adopted. Some additional communications were read and accepted.

Delegates were appointed to represent the Society at the several State Conventions next year, and twenty-eight delegates were elected to the American Association for 1878. The retiring President, Dr. T. D. Fitch, then thanked the Convention for the honors conferred upon him and for their attention and courtesy under his Presidency. The Society then adjourned, to meet one year hence at Springfield.

On Wednesday evening the Medical Profession of the city of Chicago, through the agency of the Chicago Medical Society and the Chicago Society of Physicians and Surgeons, entertained the visiting members of the State Society in a banquet at the Grand Pacific hotel.

Reviews and Book Notices.

A MANUAL OF GENERAL PATHOLOGY FOR THE USE OF STUDENTS AND PRACTITIONERS OF MEDICINE. By *Ernst Wagner, M. D.*, Professor of General Pathology and Pathological Anatomy in the University of Leipzig, etc. Translated from the sixth German edition by *John Van Dryn, A. M., M. D.*, etc., and *E. C. Seguin, M. D.*, etc. New York: William Wood & Co. 1876.

In no part of the world are the fruits of the German Laboratories more eagerly gathered up, more thoroughly sifted and more generally utilized, than right here in America. Nor is this to be wondered at. We are essentially a utilitarian people, valuing things and ideas according to the measure of their adaptability to our practical wants and necessities. From precisely this utilitarian standpoint do we estimate the value of such books as those of Virchow, Billroth, Rindfleisch, Gluge, and the one before us. The German Medical Schools are in some sort great analytical laboratories; the German mind and mode of thought is essentially analytical;

the German patiently and laboriously picks into pieces whatever comes before him, classifies and carefully labels the component parts, but rarely thinks of re-combining the integers he has dissevered. On the other hand, the American Medical School—so far as it has assumed a distinctive character at all—is synthetical; to build up, improve, utilize and economize is the American idea. How do German books look from this American standpoint?

Wagner's "Manual of Pathology," first issued in Germany in 1862, is now (January, 1876,) for the first time presented in its English dress. It is an event which merits more than a passing notice, especially in view of the intense activity which now prevails, especially on the continent of Europe in every department of pathological research. The general plan of the work is as follows: Part First—General Nosology; Part Second—General Ætiology; Part Third—General Pathological Anatomy and Physiology, and Part Fourth—Pathology of the Blood.

As we are somewhat limited as regards space, we shall pass rapidly over the parts relating to "General Nosology" and "General Ætiology," and devote our attention mainly to the parts treating of "General Pathological Anatomy and Physiology" and the "Pathology of the Blood."

We are pained at the threshold of this book, to find that the translators have made Prof. Wagner responsible for such a barbarous word as "diagnosed" (page 2); it is hardly fair to make the helpless German professor the father of such an uncouth child.

On the same page we find this general statement; "the disturbances which constitute disease" are: Anatomnico-Pathological, (that is to say histological), or, Chemico-Pathological, or Functional. But with respect to the so-called "functional" diseases, the author makes this most wise observation: "Functional or symptomatic (or dynamical) disorders are those in which we have, as yet, been unable to detect any material lesion. This, for example, is often the case in pain and convulsions. And yet in these conditions we must admit the existence of *delicate material alterations, which are not*

recognizable with our present means of investigations." (Italics are our own). The idea that disorders of function present no material changes, and are therefore destitute of interest to the histologist, ought to be abandoned at once and forever.

Turning to "Part Second," we find a very comprehensive, and, in the main, admirable essay, occupying more than one hundred pages, upon "*General Ætiology*." It seems to us, however, that the general tone of positiveness which characterizes this part of the work, is scarcely warranted by the existing state of that branch of medical science which relates to the causes of disease. And we are the more surprised at this because the very first sentence of this chapter contains these words; "*Ætiology, or the knowledge of the causes of disease, is one of the weakest chapters in pathology*"—a statement which every student of pathology is unfortunately compelled to endorse. If there is a single department of medical science concerning which our knowledge is so notably defective as to make it especially prominent on that account, it is the department of *Ætiology*; hence writers and teachers should exercise a studious caution in the expression of their opinions. But on the other hand, it is very encouraging to witness the great activity now manifested in all parts of the world, in the investigation of the causes of disease. Not very many years hence, it will be "in order" for an author to express his opinions upon this point with some degree of assurance that it amounts to something more than mere guess-work.

Part Third—"General Pathological Anatomy and Physiology" occupies three hundred and sixty nine pages, making something more than half the entire work. We are glad to observe that Prof. Wagner so pointedly recognizes the fact that Physiology and Pathology are most intimately related—that in truth there is no dividing line between them. Those of us who are engaged in teaching Pathology, know only too well how difficult it is to convey to the mind of the student, the idea that there is no abrupt and strongly marked boundary line between health and disease; that the same tissues and the same vital elements are involved, whether the various func-

tions of the economy be carried on healthily (Physiologically) or unhealthily (Pathologically). Indeed, quite too often the first and most difficult duty of the teacher, is to disabuse the mind of the beginner in medical science of the notion that "disease" is a sort of lawless invader—a something entirely *sui generis*, which takes possession of the system and proceeds to do various acts of violence, unless evicted by some sort of a therapeutical mitrallense which the physician selects from among his manifold resources, and discharges at the offender. But it is a hopeful sign of progress when text-books—which are generally behind rather than in advance of aggressive professional opinion—take cognizance of the fact that Physiology and Pathology have a common point of departure.

The part of Prof. Wagner's book now under consideration seems to us to possess great value. It is built upon an excellent plan, and the plan is successfully carried out. It is not loaded down with the debris of long-forgotten theories, or water-logged by being forced to carry all the crude and half digested notions which in this age of ceaseless activity must necessarily encumber the precincts of medical science. Good judgment has been exercised both in what is said, and what is left unsaid. We commend this part of the work to the student and young practitioner, because it is in the main worth studying and worth remembering. It is refreshing to find the latest discoveries concerning the circulation in the lymphatic system; the spontaneous movements of the white blood corpuscles, or "leucocytes;" and the origin, function, and destiny of fibrin so clearly and admirably stated. These three questions, (more especially the two last) have been a stumbling block to most teachers of pathology for years past. But Prof. Wagner simply accepts the doctrines which now seem to be established, states them with impartial frankness, and then leaves them to take care of themselves. He does not seem to be hampered by preconceived hobbies, which he feels bound to bolster up by "arguing the case." The present somewhat diverse doctrines concerning inflammation and the origin of pus corpuscles, are clearly and impartially stated. Part fourth—the "Pathology of the Blood"—is the

concluding portion of the work. Its merits are many; its faults are comparatively few. It is impossible for one author to cover so wide a range of subjects as Prof. Wagner attempts to include in his book; moreover, it is equally impossible to crowd into a single volume—unless it be of gigantic proportions—all that ought to be said even in a “Manual” of “General Pathology;” but our author has probably come as near accomplishing the impossible as any one could.

We do not like the chopped style, or the angular, juiceless sentences with which the book abounds; we detest the small type and closely crowded lines; but the plan of the work renders both a matter of necessity.

The translators have done their work admirably well. It is a rare luxury to find a German work translated into readable English. Many of the German books which have appeared in English dress make a dreadfully stiff and awkward appearance.

Perhaps “Rindfleisch’s Pathological Histology” wears the most slovenly and ill-fitting English suit of any book yet “translated.” It is doubtful if Rindfleisch would recognize his own ideas in the solemn and ghostly garb which they are compelled to wear since we tried to naturalize them. The cheerful and sprightly pages of Flavius Josephus are fascinating—we had almost said side-splitting—in comparison with the monkish austerity of the English edition of that most admirable book, “Rindfleisch’s Pathological Histology.”

The translation of “Frey’s Compendium of Histology” is almost as bad; it is needlessly unreadable and inexcuseably unenjoyable.

We turn with pleasure to the English—or American—edition of “Wagner’s Manual;” the translators seem to have done their work with severe accuracy, but they did not forget that their task involved the translation of *ideas* as well as words. We believe Prof. Wagner’s work will be widely read in this country; certainly nothing better of its kind is now attainable.

I. N. D.

Medical News and Items.

MEDICAL COLLEGE GRADUATES OF 1877.

Jefferson Medical College, 198; University Medical College, N. Y., 157; Ballou Hospital Medical College, 147; University of Pennsylvania, 121; College of Physicians and Surgeons, N. Y., 118; Rush Medical College, 103; University of Louisville, 80; Ohio Medical College, 80; University of Nashville, 70; Louisville Medical College, 47; Albany Medical College, 38; Chicago Medical College, 37; Hospital Medical College, Louisville, 36; Miami Medical College, 35; University of Buffalo, 31; Detroit Medical College, 30; College of Physicians and Surgeons, Indianapolis, 23; Medical College of Indiana, 22; University of California, 20; Medical College of the Pacific, 20; McGill University, Montreal, 19; Woman's Medical College, Philadelphia, 15; Woman's Medical College, Chicago, 4. A grand total of 1,461 doctors turned out in one year!

SALE VS. LOUISVILLE MEDICAL COLLEGE.—It will be remembered that last fall L. R. Sale, a student of the Louisville Medical College, (Phenomenon) entered suit against that institution for a return of fees paid in, on the ground that the school was not what it was held out to be. The following, from the Louisville Sunday *Argus*, gives the result of the suit:

The suit of L. R. Sale against the Louisville Medical College, which has been hanging fire in the court of Esquire Speed Peay since last November, was finally decided, by a verdict for the plaintiff, last Thursday. Sale sued for the recovery of fees paid to the concern, claiming that the college was not a legally-constituted institution, inasmuch as there had been great irregularity in the election of the board of trustees. He

also made allegations against the efficiency of the school. The court rendered a verdict giving the plaintiff all that he prayed for, thus admitting all the allegations set up by him. This speaks badly for the Louisville Medical College and the Kentucky School of Medicine, (both are the same.) The amount sued for is small, but there is a great question involved in the matter, and that question is, Can the graduates turned out by this school since the election of the present board of trustees (two years ago) be considered diplomated physicians, since the college has been declared not a legally-constituted institution? —*Louisville Med. News.*

THE Nashville Medical College and the Medical Department of the University of Nashville and Vanderbilt University. These two institutions have two graduating courses every twelve months. They have both broken out this year with the same complaint and are engaged in the much disputed proceeding of graduating two sets of classes every year. A summer session in Nashville must be a very warm affair.

THE INDIANA STATE MEDICAL ASSOCIATION held a two days session at Indianapolis on the 15th and 16th ult.

The following are the names of the newly elected officers: President, Dr. L. D. Waterman; Vice-President, Dr. N. P. Howard; Secretary, Dr. G. V. Wollen; Assistant Secretary, Dr. G. W. Burton; Treasurer, Dr. J. C. Walker; Librarian, Dr. J. R. Featherstone.

The annual meeting of The Chicago Médico-Historical Society was held on the evening of April 30.

The officers for the present year are: President, Dr. W. Godfrey Dyas; Vice-President, Dr. E. L. Holmes; Treasurer, Dr. R. G. Bogue; Secretary, Dr. Plym. S. Hayes; Editor, (permanent) Dr. D. W. Graham. Publication Committee:

Drs. John Bartlett, F. C. Hotz and John E. Owens. Diarist, Dr. S. Wickersham.

At the late meeting of the Illinois State Medical Society a resolution was passed requesting and authorizing the Medico-Historical Society to publish an Annual Medical Register of the State, and directing the co-operation of its own officers in preparing the register.

At a late meeting of the Medical Board of Cook County Hospital, Dr. E. Andrews was nominated and recommended for the vacancy on the surgical side of the staff caused by the death of Dr. J. W. Freer. The Board of County Commissioners, however, ignored the nomination, and taking the matter in their own hands appointed Dr. Charles T. Parkes.

Dr. Moses Gunn has recently commenced his first term of service in that Hospital, he having been appointed on the staff several months ago, in a place created by the remodeling of the rules and regulations of the Medical Board.

THE CHICAGO SOCIETY OF PHYSICIANS.—The annual meeting of this society was held Monday evening, May 14. The election for officers resulted as follows: President, Dr. W. H. Byford; Vice-President, Dr. J. H. Etheridge; Secretary and Treasurer, Dr. E. W. Sawyer.

The meetings of the society are held the second and fourth Monday evenings of each month at the Grand Pacific hotel.

MORTALITY IN THE CITY OF CHICAGO FOR THE MONTH ENDING MAY 19TH, 1877.—Total mortality, 581; males, 311; females, 270; under 5 years of age, 286. The principal causes of death were: Apoplexy, 12; croup, 19; scarlatina, 63; meningitis, 29; convulsions, 52; diphtheria, 12; diseases of heart, 13; phthisis pulmonalis, 74; pneumonia, 38. Population, census

1874, 395,400; estimated population, 420,000; number of deaths to every 1,000, total estimated population, 1.38.

O. C. DEWOLF, M. D.,
Commissioner of Health.

THE MEMBERS of the medical society of Madison county, Iowa, not wishing to bid against each other for the pauper practice of the county, requested the board of supervisors to make the society, as a body, a proposition for doing the work. The proposition was made and accepted, and the society have undertaken to attend the county patients. The salary received is to be entirely devoted to the establishment of a medical library and reading room. The society hopes to retain the contract for several years, and we hope they may be successful. This is an example which might well be followed by other societies.

THE CENTRAL FREE DISPENSARY of this city has just received a donation of drugs from Henry Thayer & Co., of Cambridgeport, Mass. We are glad to see this worthy institution aided in its efforts to relieve suffering, for although many of our own merchants have ever been generous to this and similar institutions, the officials, who should at least provide medicines for the sick and destitute, are extremely niggardly with these institutions and do not furnish one quarter of the medicines needed by the thousands who apply for medical aid.

Texas Laws and Medical College Diplomas. The Texas legislature enacted a law last winter, "Regulating the practice of medicine in the State of Texas," providing that all medical men shall be examined by a Board of Examiners, "regardless of their credentials." A letter before us from a Northerner in Texas, a graduate of Rush Medical College, alleges that this law was inspired, and is chaperoned, by medical men of Texas to get, and keep, control of the medical practice of that State.

He appeared before the Board, like a law-abiding citizen, paid the \$15 fee exacted, passed his examination, submitted his diploma for inspection, all of which resulted in his receiving through the postoffice "the following characteristic lines: 'We decline to issue to you a certificate of qualification.'" The Doctor claims that the law is a persecution of Northerners, and condemns the high-handed proceeding "as an unwarranted assumption of authority in passing judgment upon the professional qualifications of graduates from properly chartered medical colleges."

THE KENTUCKY STATE MEDICAL SOCIETY AND THE TWO SCHOOLS OF PROF. GAILLARD. At its recent annual meeting in Louisville, the largest meeting ever held by this society, the following resolutions were unanimously passed, "with bursts of applause." It would seem that their own State society is up in arms against the one Faculty that conducts two distinct and separate graduating lecture sessions annually, under the extremely gauzy pretext of running two distinct and separate colleges. If his own State society pass resolutions so condemnatory of Professor Gaillard's multifarious annual graduating sessions, how can he expect to make the whole country abstain from questioning the propriety of his course? The resolutions were offered by Dr. John Baker, an ex-president of the society, possessing no college connection whatever. They are as follows:

Resolved, That this society is in full accord with the American Medical College Convention, seeking to elevate the Standard of medical education in this country.

Resolved, That summer schools, which enable students to graduate after from eight to nine months' study, are exerting an evil influence upon the profession.

Resolved, That a winter and summer course by the same school, and graduation at the end of each, tends to deteriorate the standing of the medical profession.

THE Medical College of Fort Wayne, Ind., issued last year its first annual announcement, containing a Faculty list of ten

professorates and two adjunct professorates. Its *raison d'être* is extremely unique. The diseases peculiar to the Maumee and Wabash valleys furnish the grounds upon which this new college takes its stand. Students should be educated and trained in the part of the country in which they intend to practice. Hence to treat "diseases peculiar to the Maumee and Wabash valleys," a young man must be educated in a college located in those valleys. The colleges of this country ought to take the hint and establish "Professorships of diseases peculiar to the Maumee and Wabash valleys," of the diseases of the far West, of the diseases of the Mississippi basin, of the disease of the upper lakes, and so on *ad infinitum*. The construction of the sentences of this new announcement is something amazing. For example, "There exists in this region forms of diseases peculiar to the country," etc., "It is no longer now as it formerly was" (!!) The following stunning sentences are reproduced *verbatim, literatim et punctuatim*:

"To sum up concisely the reasons that have induced so important and arduous an undertaking as the establishment of a new Medical College, we may state that there exists in the region of which Fort Wayne is the geographical center, a well marked endemic influence inducing diseases more or less peculiar to the country.

"That diseases common to other parts also receive a well marked impress from the same endemic influence; that this endemic influence itself undergoes a change, varying from time to time with the history of the country; that the course of the successive stages of endemic influence is dissimilar in different districts, and different in point of time.

"That these facts lead to the inevitable conclusion that every district is to be studied separately, and it becomes every one contemplating the practice of medicine to obtain his clinical instruction in the same district in which he designs to labor."

The Colleges and the Three-Years-Reading Requirement for Graduation. Every one of the 57 American Medical Col-

leges, with the exception of the following named schools, require, according to their annual announcements, the three-years-of-study qualification in candidates for the doctorate, viz., The University of Georgia Medical School, The Kentucky School of Medicine, The Louisville Medical College, Central University Medical School, (Louisville) Washington University Medical School, (Baltimore) University of Maryland Medical School, University of Virginia Medical School, Medical College of Virginia and the Medical Department of the University of Nashville and Vanderbilt University. Professor Gaillard is the inspiring genius of the two schools that he is connected with, viz.: The Kentucky School of Medicine and the Louisville Medical College, and he has ceaselessly advocated, for years, the throwing overboard the three-years-study clause, which every physician supposes of vital importance to graduation. He has advocated its abolition, argued for it, fought over it, written upon it, and in every way given himself up to insisting that excellency in examinations was *the* thing to be considered in granting diplomas; and if a young man could stand his examinations at the end of nine months, or of nine years of reading, time made no difference. Every college that he heard of joining him in abolishing the three-years-study clause, he publicly welcomed in his medical journals. No editor in the country has abandoned himself to this new departure in requirements of candidates for graduation so conspicuously as he, and it must be confessed he has wielded a power in the South, when we see that the colleges above enumerated are all Southern schools. The stand that this erudite professor and editor has so conspicuously maintained before the American medical public, is now rendered all the more ridiculous and farcical by a ghastly attempt to show how virtuous his two colleges are, and how recently they have become so. In commenting, in his *American Medical Bi-Weekly*, on the passage of the resolutions adopted by the Kentucky State Medical Society at its late sitting, he submits the following: "The Medical Institution of the State against which these State society resolutions are aimed has had for four months past—(mark well the ancientness of the reso-

lution—FOUR MONTHS!!")—upon its record books a resolution, that no student shall be allowed to come up for graduation who does not file written evidences that he has been a student of medicine for two years; that school (the Kentucky School of Medicine, and one other (the Louisville Medical College) are the only medical institutions in this State which have enacted such a law." For the simple reason, we suppose, that every other medical college in Kentucky requires THREE years instead of two.

The most inconoclastic remarks on graduation qualifications comes from the last announcement of the Medical Department of the University of Virginia. Listen:

"The degree of Doctor of Medicine is conferred upon such students as prove their fitness for the same by rigid and searching examination. It has ever been the policy of the institution to make its honors testimonials of merit, and not certificates of attendance on a prescribed course of instruction. In accordance with this policy, the degree of Doctor of Medicine may be conferred upon a first-course student if found worthy of it. Not only is it within reach of the intelligent, diligent and persevering, to graduate in one session of nine months, but in point of fact many do thus graduate. A longer time, however, is often devoted to the necessary preparation and wisely, when circumstances permit. It is not an unusual case that an academic student, looking forward to medicine as his profession, conjoins a part of the medical with his academic studies during one session; and during the next, entering as a medical student proper, he is enabled to graduate at the close thereof with comparative ease."

The next new wrinkle will be to grant a diploma to students just before they have time to attend lectures.

DEATHS OF DOCTORS FROM DIPHTHERIA IN PARIS. M. Carrière has just died of diphtheria, at the early age of thirty-one. He makes the fifth doctor who has died in Paris within a short time from the same disease; viz., MM. Reginauld, Dubois, Mécandén, Cintrat and Carrère. How many others may there be who die obscure and unknown?—*Gar. des Hôpit. Ap.* 24.

Editorial Notices.

The index to this volume will appear with the next number.

Owing to the report of the convention of the Illinois State Medical Society, reports from other societies and other matters of interest could not be published in this issue.

A NEW THERMO-CAUTERY.

An ingenious and novel device by which thermo-cauterization may be produced, has recently been perfected by Dr. Guérard. We append a cuts howing the instrument. One or two ounces of benzine are put into the bottle (*a*), which is then closed with the rubber stopper (*b*), when the cautery point is selected and screwed to the front of the instrument (*c*). The guard is drawn open with the thumb-button (*d*), and the bottle hooked to a button-hole in the coat by the hook (*e*). The hand-ball (*f*) is worked gently with the left hand, the instrument being held in the right with its point over a lighted lamp which will ignite the gas. When there is a good blast, close the guard by pushing the thumb-button (*d*) forward, and the platinum cauter may be heated to the required intensity and kept so by occasioned compression of the hand-ball.



Our readers will remember that the AMERICAN MEDICAL ASSOCIATION will meet in Chicago on June 5th.

PROSPECT.—When, a few months since, we were cast upon our own resources for the publication as well as the editorial management of the JOURNAL AND EXAMINER, we were not without apprehension as to the difficulties we should be called upon to encounter, and our ability to surmount them. Unaccustomed to the transaction, in detail, of all the business necessary for the pecuniary success of so important an enterprise, we could not help looking into the future with some anxiety. This solicitude, however, prompted the vigilance, industry and forethought which have resulted in what we can, without hesitancy, proclaim a triumphant success.

As evidence of the latter fact, and as a reward for the faithful and liberal patronage of which we are the recipients, we propose adding sixteen more pages to our periodical. This will place us on a par, in respect to space at least, with the best American medical journals. Hereafter each issue of the JOURNAL AND EXAMINER will contain 112 pages, instead of 96, as heretofore. The aggregate number of pages for the year will therefore be 1,344. The subject-matter will be the same in variety and value as we have given our readers since the establishment of our joint periodical.

Our arrangements for obtaining scientific and practical contributions, hospital reports, clinical lectures, correspondence, local and general news items, etc., etc., have never been so good as they are now. Add to this our very large list of American and foreign exchanges, and it will be seen that our facilities for making an *excellent* journal are everything that could be desired. Already large, and when bound somewhat bulky; with the additions we are now making, our volume will become too ponderous for convenient handling. To remedy this inconvenience, and to afford us the opportunity for adopting other conditions which we think will be advantageous to our readers, as well as ourselves, we have determined to divide the yearly publication into two volumes of

six months each; the one to begin in January, and the other in July. This number will therefore terminate the present volume, and will accordingly be furnished with an index. The completion of the volumes, semi-annually, will enable those who desire to do so, to commence their subscription in January and July, and still obtain a complete volume.

The yearly subscription price will remain the same, if paid in advance, according to our published terms. We cannot point out to those who patronize medical periodicals how they can get more substantial reading for the same expenditure.

We take this occasion to express our warmest thanks to the many friends who have stood by us so faithfully during the years gone by. To our new friends who have recently extended to us their patronage we say welcome; to both we renew our promises of industrious and unremitting efforts to make the JOURNAL AND EXAMINER more worthy of their good will in the future than it has been in the past.

The JOURNAL AND EXAMINER has now nearly completed its second year, and we think it no exhibition of vain affection for our favorite charge, to say that with each issue it has shown increased vigor and comeliness; and that we are continually presented with facts which give us gratifying assurance that the labor and pains taken with it receive the hearty approbation of the profession wherever it is read.

APOLOGY.—We owe it to our readers and to ourselves, to state that a notice announcing the meeting of the Illinois State Medical Society, held in Chicago last month, was to appear in our last issue; but the printers, when arranging the forms, inadvertently left it out. We were greatly chagrined at this unfortunate accident, but felt considerably relieved when we saw that the convention was very well attended nevertheless.

CORRECTION.—We beg to correct an erratum which occurred in the last issue. On page 465 the name of the new president of Rush Medical College reads J. Adams, instead of *J. Adams Allen*.

BOOKS AND PAMPHLETS RECEIVED.

Civil Malpractice: A Treatise on Surgical Jurisprudence, etc.

By M. A. McClelland, M. D. 1877.

The Cure of Rupture, etc. By George Heaton, M. D., etc.

Edited by J. H. Davenport, A. M., M. D., etc. 1877.

Atlas of Skin Diseases. By L. A. Duhring, M. D., etc. Part II. 1877.

Archiv der Pharmacie. VII. Band, 4 Heft.

Correspondence.

WENONA, ILL., May 10, 1877.

DR. INGALS.—*Dear Sir:* I noticed in the May number of your JOURNAL a very interesting communication from Dr. E. W. Lee, "On the Best Means of Promoting Union by First Intention," by the use of fine needles for sutures.

I have been in the habit, for a good many years, of using a quite simple plan in scalp cuts, which renders shaving of the scalp unnecessary. I use neither sutures, pins nor plasters, but simply take up a small lock of hair on each side of the cut, near the margin of the wound, and tie them with the surgeon's knot. This simple procedure produces good results, and as I don't recollect of ever seeing the suggestion in any medical works, I thought it would do no harm to give the hint to the profession.

Yours truly,

K. E. RICH.

Summary of Progress in the Medical Sciences.

I. SURGERY.

Operative Treatment of Varicose Veins. SCHEDE. (*Wiener Med. Zeitung*, 1877. No. 8.)

In the past year the writer accomplished in ten patients the artificial obliteration of the varicose veins of the leg, by ligations, in the following manner: After a bandage was applied around the thigh sufficiently firmly to make the varices swell up, the latter were exposed by an incision, carefully isolated and ligated with catgut, at the distal and proximal ends. Then the veins were cut through, between both ligatures, and the cutaneous wound was closed by interrupted silk sutures. The whole operation was performed under the carbolized spray, and an antiseptic dressing was applied afterwards. The limb thus operated upon was placed securely on a splint, in order to prevent any motion, and to obviate the breaking off of thrombi and their introduction into the circulation. The first dressing was, as a rule, not changed till the fifth day, when the sutures were removed. Although then the wound was healed, the patient was not allowed to get up till the fifteenth day. The result of this treatment was perfect, concerning the complete absence of dangerous complications and of violent reaction.

Lately the doctor has simplified his method by substituting the subcutaneous ligature. Where the vein is to be obliterated, a prepared catgut is passed around it, with a curved needle, without any cutaneous incision. The desired number of ligatures thus put in place, a piece of strong rubber tubing, of about the thickness of the little finger, is put on the skin, following the course of the vein operated upon. The ligatures are tied over this tubing, while an assistant is compressing the latter. The elastic tension of the rubber suffices to keep the ligatures perfectly tight and the opposite walls of the vein in permanent apposition. After twelve hours, one half of the ligature is removed, and after twenty-four hours, the balance. By this time, the rubber tube has made a deep groove into the skin, and is kept in its place by an antiseptic bandage, at least one week. After this period, the cure can be considered as completed. As a remarkable fact is mentioned the total absence of any decubitus, though the skin has been so long submitted to continued pressure by the rubber tubing.

Treatment of Fractures of the Elbow in Children. BERTHOMIER. (*Thèse de Paris*, 1875; *Bullet. gén. de Thérapeut. Méd. et Chir.*)

In the treatment of these injuries in children, should the member be immovably fixed in a state of flexion or extension?

According to Berthomier and Laroyenne, that which is most to be dreaded is not traumatic arthritis (which is rarely so severe as to terminate in ankylosis), but a vicious position of the fragments which in most cases causes the obstacle to natural movements. This fact has been verified in a large number of cases.

Now, proceeding from the fact that the sole position capable of bringing about exact coaptation of the fragments is that of extension, these authors have for several years treated all fractures of the elbow in children in this position. In all cases they have observed, after consolidation has been effected in these favorable conditions, that the articular stiffness yielded to appropriate treatment in about a fortnight (sometimes less), so that the joint could be placed in nearly all, if not quite all, of its normal positions. They take care to add that in some instances the indication is quite the reverse of that stated, when, for example, there might be a fear of complications due to dysthetic processes, white swelling of scrofulous subjects, etc.

The rare accident of epiphyseal separation of the epicondyle, necessitates immobility in the flexed position.

Treatment of Carbuncle. J. H. DIBRELL, Jr., M. D. (*Phil. Med. and Surg. Reporter.*)

By the use of Carbolic acid and Collodion, good results are secured. They can be used in any stage of the disorder. D. tells us how he used these agents:—

My plan is as follows:—When the carbuncle is seen early, to puncture it, and with a camel's hair pencil, or small pointed stick, introduce into the opening thus made the pure and undiluted acid. If the disease has made greater progress, and one or more small acne-like pustules have made their appearance on the tumor, these are carefully opened, which can be done without causing pain, and the acid introduced at each opening, as before indicated. The effect of the acid when first applied, especially if it touch a denuded surface, is to produce a sharp stinging pain, which is, however, of but momentary duration. The next effect is local anæsthesia, and the patient is, for a time, perhaps hours, free from pain.

Carbolic acid possessing in a notable degree anæsthetic, antiseptic and caustic properties, would seem to be peculiarly adapted to the treatment of the disease under consideration, which is usually attended with great pain, sloughing, and an intolerable odor. Its use in my hands has certainly seemed to diminish the pain, correct the odor and to arrest the sloughing process with much promptitude.

After the acid had been applied, collodion should be several times painted over the carbuncle, and beyond it, a few lines, on the uninflamed skin. *All the openings are to be left free*, in order to give egress to discharges. Each layer or film of the collodion should be allowed to dry before another is put on. This dressing may be renewed once daily, and the collodion previously applied, if partially detached, should be peeled off before a new application is made. If the part on which the carbuncle makes its

appearance be covered with hair, this should be cleanly shaved off, otherwise the collodion will be difficult to remove, and at the same time cause considerable pain.

It is interesting to watch the collodion as it contracts upon the diseased tissues. The skin, previously red and swollen, will in a few minutes be seen through transparent gun cotton, to have become pale and depressed, as the pressure gradually empties the engorged capillaries. If the disease is advanced, and sloughs have become partly separated, they are not unfrequently forced out, or brought so near the openings as to be readily detached with scissors. This pressure does not give rise to pain, but on the contrary, generally affords much relief to the suffering patient. The application of collodion in this disease has other advantages. It limits the extent of the disease in decreasing the vascularity of the part, and in this way lessens the inflammatory action going on, and probably also prevents the absorption of pus. It also protects the surrounding skin from contact with the discharges, which, as is well known, are capable of producing, if not an extension of the disease, numerous small boils, which are of themselves an exceedingly annoying complication. Should, however, any such pustules or boils be formed in the course of the disease, they can be cut short by touching them with carbolic acid. After the carbuncle has been treated with the acid and collodion, it should be protected from contact with the clothing, by covering it over with a piece of old linen or cotton cloth, saturated with sweet oil, or spread with carbolic acid cerate.

Constant Irrigation in Chronic Cystitis. JACKSON. (*The Boston Med. and Surg. Jour.*, April, 1877.)

Dr. J. reports two cases of chronic cystitis successfully treated by constant irrigation. The means used were a vessel containing water, a double catheter, and india-rubber tubing sufficient to convey the water to and from the bladder. The flow was regulated by a stop-cock attached to the reservoir. The position of the vessel should be such as not to cause pain by excessive pressure, but it is necessary that the bladder should be fully distended at times, in order that the whole surface may be thoroughly cleansed. About a barrel of water is needed in twenty-four hours. Of the first case, he says that, the usual method of intermittent irrigation was adopted, and continued about two months, without benefiting the patient, at the expiration of which time constant irrigation day and night by means of water about the temperature of the body was substituted. A constant flow of water into the bladder was kept up for three days, when the catheter was withdrawn and the urine examined, which, on previous examinations, was alkaline, but now, for the first time, was acid. Irrigation at intervals, varying from two to three days, was kept up for about one month, at the end of which time the case was discharged cured. Case two was not unlike the first, only in duration of time; about one month of treatment, by constant irrigation, at intervals varying as about in case one, was sufficient to cure the patient.

W. F. L.

Treatment of Wounds. PROF. V. DUMREICHER. (*Wiener Mediz. Wochenschrift.* XXVII—6.)

The rapid healing of wounds without any, or but very slight fever, and without any, or but little secretion of pus; and how to prevent the occurrence of traumatic diseases—these problems have given rise to much discussion, and yet they cannot be considered as satisfactorily solved.

Lister has accomplished a great deal. Nussbaum, Volkmann, Thiersch and many others, have had very favorable results from Lister's method. They all attempt to prove, from their experiments, the superiority of Lister's antiseptic method over the common open treatment of wounds.

The advantages claimed for Lister's method are:

1st. The protection of wounds from all untoward influences, therefore preventing traumatic diseases.

2d. The more rapid healing of wounds, either *per primam intentionem*, without fever, or rapid healing, with very slight fever and but little suppuration.

After Volkmann, Thiersch and Nussbaum made their report to the German Congress of Surgeons of the year 1876, recommending Lister's antiseptic treatment, Burrow reported on the success his father and himself have had in the open treatment of wounds.

The hospital under their supervision contained 16 beds; ventilation imperfect; the patients of the poorest class; several amputations and other operations were performed by students. Under these circumstances, their report shows that out of 123 operations but 7 per cent. proved fatal. While Lister shows a mortality of 17 per cent., Volkmann, 18 per cent., and Thiersch, 23 per cent.

The authors who are in favor of Lister's method differ in their opinions as to its protective power. Nussbaum looks upon it as a prophylactic agent against hospital gangrene rather than against pyæmia. Volkmann does not think that Lister's method will protect the patient entirely from traumatic diseases, particularly not from erysipelas; he, however, believes that these diseases will decrease in frequency and severity under its use. Thiersch believes that Lister's method is a prophylactic agent against pyæmia.

For the open treatment of wounds, as practised formerly, well-ventilated apartments were required, the greatest cleanliness was necessary, and an experienced corps of assistants and nurses was indispensable. The constant supervision of the surgeon was also required. Any of these conditions failing, the treatment was not a success.

In the technic of operative surgery decided progress has been made—improvements that were essential for the open treatment. We have the catgut ligature which causes no suppuration, and if the wound is closed, will be absorbed; anæsthetics and Esmarch's bandage allow the surgeon to prepare the wounded surfaces as he pleases.

A close study of Lister's method shows that the largest wounds, if properly attended to, can heal by first intention. Considerable experience is required to properly apply the bandages so as to obtain favorable results.

To fully carry out the directions given by Lister would require skilled assistants and costly bandages, and if not carried out strictly according to directions, our labor will be for naught. For a country surgeon, it would be almost impossible to make use of this method.

Prof. D. has his doubts as to whether the antiseptic measures, as laid down by Lister are at all necessary.

We know that in healthy individuals a wound will heal by first intention, if the edges of the wound are brought into close contact and held there; and that if the person is unhealthy, his blood impoverished, a similar wound will not heal by first intention, owing to a want of plasticity of the exudation between the surfaces.

A wound in a healthy person can be healed by first intention if the following conditions are fulfilled:

1st. To give the surfaces of the wound such a form that they can be brought in the closest contact.

This can be easily accomplished in operations of the extremities by using anæsthetics and Esmarch's bandage.

2nd. To use a ligature that will be absorbed and cause no suppuration.

3d. To cause the wounded surfaces to secrete a copious plastic exudation. This can be accomplished by applying a 4 to 8 per cent. solution of chloride of zinc to the surfaces.

4th. When there is no longer any danger from hemorrhage, to bring the opposite surfaces in close contact.

5th. When it is impossible to bring the surfaces in close contact, to allow a free escape to any pus that may be formed. This we can do by using the drainage tube.

6th. To prevent the dressings, after being impregnated with the secretion of the wound, from adhering to the skin, because, in removing them, we may disturb the parts, by partly tearing open the wound. After the wound has been treated as above directed, a piece of waxed paper is placed over it, openings being made in the paper for drainage tubes, if any are used.

To cause the surfaces to come in closest contact, cotton is put over the surfaces of the wounds, and through adhesive plaster and bandages, the necessary compression is made. The cotton being elastic, there is no great danger of making too severe pressure.

This method was tried in cold abscesses, exudations in the sheaths of tendons and hydrocele, with the best of results.

The results have been so gratifying as to prove that Lister's good results are not due to the antiseptic measures adopted, but to the close adaptation of the surfaces, to the exciting of inflammatory exudations and to the free escape of pus. Dumreicher, therefore, cannot accept the doctrine of Lister, maintaining that the favorable course of all wounds treated according to his method and the absence of all traumatic diseases are due to his antiseptic measures.

Stich and Panum, by their experiments on animals, proved that pyæmia

and septicæmia could only be produced by direct infusion of the poison into the veins. Burrow's statistics show that by cleanliness, poisoning of wounds can be prevented. During the operation, the escape of blood from veins prevents the introduction of poison; after the operation, the air, which carries the septic germs, is excluded by the close union of the edges, and the drainage tubes are rendered impervious to air by closing their external end.

D. considers it a rather one-sided view, which claims that traumatic diseases are produced mostly by external influences, air, etc.; he thinks that the individuality of the person, his state of health, the condition of his blood, etc., etc., are very important factors.

How to Prevent Hemorrhage After the Removal of Esmarch's Bandage.
DR. RIEDINGER. (*Deutsche Zeitschrift für Chirurgie*, XVII., 5 and 6.)

The greatest disadvantage attached to the use of Esmarch's bandage, is the profuse hemorrhage following the removal of the elastic band. The hemorrhage in profuseness depends upon the force of constriction, and the length of time which it is allowed to remain. The amount of blood lost in many cases is often more than that following digital compression.

Esmarch himself admits that there is considerable capillary hemorrhage after the removal of his bandage, but thinks that it is easily stopped and of no long duration.

The author mentions the names of many eminent surgeons, who have seen the most profuse hemorrhage after severe operations, particularly after amputations; the blood pouring out of the wounded surfaces as if from a sponge.

Various surgeons of England, France and Germany are mentioned, all of whom have had unpleasant experiences with this secondary hemorrhage.

The author believes that hemorrhage is caused through paralysis of the vaso-motor nerves; further, that through the constriction, the blood being forced entirely from the part operated, no coagulation of the blood takes place.

Various means have been tried to check this hemorrhage, but they have, as a rule, not been very successful, *e. g.*, cold applications, ice, ice-water; but the hemorrhage persists in spite of these applications often fifteen minutes, and sometimes one-half to one hour.

Esmarch recommends the ligation of every blood vessel, veins as well as arteries.

P. Bruns has ligated as many as thirty-six vessels, and still had hemorrhage. Bardeleben has ligated all arteries mentioned in anatomy, and those vessels presenting themselves to the eye, arteries and veins, and still had considerable hemorrhage.

The author has performed experiments on animals to see whether the sensibility of the nerves was entirely overcome by the constriction of bandage. The reaction upon applying electricity was quite apparent,

and from this he was led to apply electricity to the nerves which supply the vessels of the part operated on; his results were quite satisfactory, so much so that he recommends the application of electricity before the removal of the bandage. He uses the induced current. The poles to terminate in sponges; one pole to be placed on the wounded part, the other electrode to be passed over the nerve or nerves which distribute branches in the bandaged part, he has succeeded in reducing the hemorrhage to a great extent.

II. THERAPEUTICS.

Atropia for Epilepsy. SWETLIN. (*Allg. Med. Centralztg*, 1877, No. 5).

In the clinic of Prof. Leidesdorf, a number of experiments made on Guinea pigs decidedly proved that atropia in small doses (one to four milligrammes) diminishes the action of the reflex nerve centres, while other experiments confirmed the well known fact that the long-continued use of larger doses of atropia (5 to 20 milligrammes) markedly increases the reflex excitability. Some Guinea pigs made perfectly epileptic by Brown-Sequard's operation recovered completely in two or three weeks under the daily administration of 0.002 atropiae sulphas, while other Guinea pigs which were operated upon on the same day but were not medicated with atropia, continued to have the epileptic fits. Though the experiments with epileptic patients did not yield a complete success in every case, still the results were highly satisfactory in most cases. Recent cases of the purely motor epilepsy were always healed; in several cases of an inveterate epilepsy complicated by mental derangement, the recovery was complete, in others the number and severity of the attacks were greatly diminished. The remedy was prescribed as follows: Atrop. sulph. 0.05, pulv. et extr. gylcyrrh. q. s. ut f. pilul. 50; S. Take one pill daily.

The clinical observations show that the atropia given in daily doses of one milligramme may be continued for several months, without producing any signs of intoxication, and that this continued use of such small doses is a very efficient treatment of epilepsy.

Remedy for Headache. J. E. LOCKRIDGE, M. D. (*American Practitioner*)

The doctor confines his remarks to idiopathic—so-called sick headache, or nervous headache, or neuralgic headache, and not the headache from organic trouble, nor to that accompanying any other disease, as fever, sore throat, small pox, etc. He says:

Many times have I been discouraged as well as worried with these cases. "Pain in my head," is the cry! Sometimes over the brow, sometimes through the temples or in the back of the head, or the whole head aches. Light and noise aggravate it; the room must be darkened and every one must walk noiselessly, suffering almost as much as the patient. Sometimes the head is hot; generally, I believe, there is no unnatural heat, except perhaps in the case of gentlemen who have spent a late evening over

an extra glass of wine, or who have overtaxed their brains from a press of business. Sometimes there is nausea, attended or not with a slight coating on the tongue; just as often there is no nausea or other appreciable derangement of the digestive apparatus.

Now comes the perplexity and discouragement. We enjoin quietude and the exclusion of light and sound; we make cold or warm applications to the head as the case may be, and use the hot foot-bath and mustard-plasters to the nucha or temples; we give antacids, or indulge the patient with acids, as oranges, lemons, etc.; we try aromatic spirits of ammonia, lavender, valerianate of ammonia, compound spirits of ether, separately or combined; in short, we go through the whole list of the so-called nervines, antispasmodics and corrigents; but in spite of all, the headache pursues its own course in a vast majority of cases.

But now for my remedy. Having observed that bromide of potassium, in twenty or thirty grain doses, and tincture of aconite root, separately, relieved more cases than any remedies I had previously exhibited, I experimented with large doses of the drugs combined. For several years I have been in the habit of giving in these cases sixty grains of the bromide of potassium and ten drops of the tincture of aconite root, in a wineglassful of water; the same to be repeated in an hour or two, if the head be not relieved; but a repetition of the dose is very seldom required. In the case of ladies and others who wish to have the remedy always at hand, or who are about to start on a journey, I supply them with the following mixture:

R	Bromide of potassium,	℥ ij
	Tincture of aconite root,	℥ j.
	Distilled water, {		
	Simple syrup, }	āā ℥ ij.

M. S. Take a dessertspoonful in some water every hour, until relieved.

My recipe may smack of empiricism in appearing as a panacea for every variety of headache, let the cause be what it may and the accompanying symptoms be what they will; but I am willing for it to rest under the soft impeachment, if indeed it relieves promptly only a moiety of these distressing cases. I will not now attempt to give the *rationale* of this seeming paradox, or the *modus operandi* of the cure, but will simply remind my readers that this nervous headache is a paradoxical, capricious, discouraging and worrying affection.

The Absorption of Mercurials. Dr. Hamburger, Franzensbad, Austria, (Prager Med. Wochenschrift.)

The literature on the question whether mercury appears in the secretions during its use as a remedy, or not, is very extensive. The contradictory results that have been arrived at can be readily explained by the methods used in detecting mercury. Before electrolysis was used for this purpose, the reaction with sulphuretted hydrogen gas was the most sensitive test known. With this it was possible to detect 0.005 gr. Hg. Cl.² in 500 C. C. of distilled water, whilst the electrolysis 0.001 gr. Hg Cl.² in 500 was distinctly detected. Former experiments on this subject, with negative results, are only of value to us in that they show that mercury was not

present in sufficiently large quantities to be detected with our present method of examination; however (electrolysis and afterwards changing the mercury to mercuric iodide), it must be remembered that only very small quantities need be present in order to make the objects to be examined, impure. Therefore all positive results must be taken with great hesitation. The author then goes on to state that the impurities may arise from the secretions, and also from the battery when that has amalgamated zinc elements. In order to avoid the latter contingency, it is necessary to keep the battery in a separate room from that in which the examination is made. The method used was that of Schneider. The substance to be examined was mixed with potassic chlorate and hydro-chloric acid, on the water bath, until all organic matter was destroyed; it was then evaporated until all the chlorine had escaped, water being constantly added, and then examined in the evaporating dish, with the electric current. When examining fæces only, the author filtered the solution. For electrolysis six Daniell cells were used to whose copper and zinc negative poles were attached, respectively platinum and gold wires. The current was allowed to act on the fluid for from 20 to 24 hours; after this time the gold wire was washed, placed between sheets of blotting paper and heated in a hermetically, sealed glass tube. After this gold wire was removed, iodine was introduced into the tube which was again sealed and heated. When mercury was present crystals formed could be recognized by means of the microscope without any difficulty. The results of the experiments are as follows:

1st Experiment. Franz Cz. . . . 24 years old. Has a papular syphilide, condylomata lata, a hard chancre and universal enlargement of the lymphatics; was treated with suppositories of 1.0 gr. mercurial ointment, which remained in the rectum from 20 to 24 hours. 6000 C. C. of urine were examined that were passed during the first four days of treatment. No mercury was found.

2d Experiment. After the same patient had been treated for two weeks with suppositories, the inunction cure was begun: 2.0 gr. of the ointment being used daily. The urine was collected from the eighth to the fifteenth day of treatment by this method. Mercury was present.

3d Experiment. Mrs. Anna Sch., 32 years old. Diagnosis: maculo-papular syphilide, universal enlargement of the lymphatics. The patient was then nursing her infant, aged four months. She was treated with suppositories. The urine examined was passed during the fifth to the fourteenth days of treatment. Mercury was detected.

4th Experiment. The milk of the same patient was examined and found to contain mercury.

5th Experiment. After fourteen days of treatment with suppositories, this method was given up, because the eruption was not disappearing, and recourse had to the method by inunction. After eight days of treatment by the latter method the urine was collected, and in it mercury found.

6th Experiment. During the same time, *i. e.*, between the eighth and eighteenth days, milk was taken from the patient. In it no mercury was found.

7th Experiment. J. H., 28 years old; has a hard chancre and a macular syphilide. The patient was put upon the inunction cure. The urine passed whilst using the first nine inunctions was collected, and mercury found in it.

8th Experiment. The fæces of the same patient were examined, and the presence of mercury distinctly demonstrated.

From these experiments the author draws the conclusions that, in order to affect the milk, suppositories ought to be used; that the mercury used by inunction never affects the milk, in which he supports the views of Dr. Kohler, but always is found in the urine and fæces. It seems that the excretion of mercury from the body takes place principally through the bile.—*Clinic.*

Jaborandi in Bright's Disease. BRUEN. (*Philadelphia Med. Times*, April, 1877.)

Jaborandi as a remedy in Bright's disease, has found great favor with Doctor B., who reports seven cases successfully treated with the drug. He found prompt relief following the administration of an infusion of ʒii to ʒiii of water, the entire quantity given in one or two hours. About one hour after taking the tea, patient is usually bathed in perspiration, dyspnœa if any present, caused by fluid in the pleural cavity, is relieved, and the general condition of patient much improved. So thoroughly convinced is the author of the value of this remedy in dropsies, that he urges the profession to make use of it in private practice. W. F. L.

Pulsatilla. WENZEL. (*Louisville Med. News*, March, 1877.)

There are two preparations of this drug, the German tincture, and the American fluid extract. The tincture is chiefly used, and in ten-drop doses three times daily for several days, will produce the same results as small doses of hasheesh. In increased doses it causes frequent micturition and hematuria. Forty-drop doses of the tincture will cause violent headache, nervous excitement, and bloody stools. Severe headaches that have resisted all other remedies, will, the author says, receive benefit by from three to ten-drop doses of the tincture three times daily for one or two weeks. He believes it acts directly on the nerve centres, and principally on the cerebrum. Great care should be exercised in administering pulsatilla, because of its poisonous qualities. Doctor W. claims that wherever a nerve-sedative is required, no remedy is equal to it. W. F. L.

III. OPHTHALMOLOGY.

The Effect of Eserine on Glaucomatous Eyes. LAQUEUR. (*Centralbl. f. d. Med. Wissen.* 1876, No. 24.)

The experience that the instillation of atropia sometimes has lit up an attack of glaucoma induced Prof. Laqueur to try whether eserine, the alkaloid of the calabar bean, would prove itself also in glaucoma to be the

antagonist of atropia. Applying upon the conjunctiva daily three to four drops of a solution of the sulphate of eserine, he noticed after three or four days a decided decrease of the abnormally high tension of the eyeball in five cases of glaucoma simplex. But the professor is not prepared to warrant the permanency of this gratifying result. The applications could be continued during three weeks, without causing the slightest inconvenience.

Calabar and its Therapeutic Usefulness. A. WEBER. (*Graefe's Arch.* XXII., 4.)

As far back as 1869, W. by a series of very ingenious experiments could assure himself of these facts; (1) that the intra-ocular tension of the vitreous humor of the normal eyeball exceeded that of the aqueous humor; (2) that atropia instilled into a normal eye reduced the tension merely of the vitreous humor, while it increased the tension of the anterior chamber; (3) that calabar acted antagonistically to atropia by increasing the tension of the vitreous space and reducing that of the anterior chamber.

The practical inference Dr. W. drew from the above observations was, that calabar ought to be substituted for atropia in all those affections of the cornea which call for a diminution of the pressure upon the posterior surface of the cornea. W. even ventures the opinion that the routine-like treatment of deep conical ulcerations with atropia has necessitated the tapping of the anterior chamber in a good many cases in which the operation could have been avoided by the use of calabar. The affections for which W. tried the use of calabar with success, are:

1. *Keratocoele.* Cases of this kind demonstrated conclusively that calabar diminishes the tension of the aqueous humor. Under its use the thinned portion of the cornea which was bulging out like a small bladder, sunk back to the normal level of the cornea, and under the continued use of calabar, the keratocoele did not return, though no pressure-bandage was applied. The corneal ulcer filled up with new tissue and healed with a small, smooth cicatrix.

2. *Conical Cornea.* The effect of the calabar upon the abnormal curvature of the cornea could be plainly noticed, and was proved by the permanent amelioration of the sight.

3. *Old macula cornea* which resisted all known remedies have cleared up under the influence of calabar, so that W. is satisfied by his numerous trials that calabar is superior to any other remedy for that purpose. Of course, it must be employed several weeks before an effect can be noticed.

4. *Deep and progressive ulcerations* either in the centre or at the margin of the cornea, as they occur in old and debilitated persons, or in children in connection with blennorrhœal conjunctivitis. In these cases the calabar achieved its most brilliant triumphs; it prevented the perforation of the ulcer; it guarded against hernia of the iris and the subsequent staphylomatous expansion of the cornea; it checked the destructive progress of the ulceration and caused the ulcer to rapidly fill up and cicatrize; and it accomplished all this without the aid of bandages or any

other means, except the cauterization of the blennorrhœal conjunctiva. While highly lauding the calabar for its excellent effect upon *deep* ulcers in the cornea, Weber did not forget to state that he could not recommend its use in *superficial* and vascular ulcerations of the cornea. Here the good effect of atropia with a proper bandage remains unquestionable.

5. *Peripheral hernia of the iris*; to reduce which calabar has before been used, but Weber applied it also to guard against an iris hernia after all incisions through the periphery of the cornea.

6. *Glaucoma*. In several forms of this disease, the calabar has, as it seemed, permanently checked the further progress of the glaucomatous process; in some cases its use was followed also by an improved vision.

W. experimented in the most cases with the extract of the calabar bean; but since he could obtain the pure sulphate of eserine, he found the results still more striking and brilliant. The eserine is 10 to 15 times more powerful than the extract; one drop of a one per cent. solution of eserine begins after five minutes to develop its effect upon the ciliary nerves and produces within twenty minutes an extreme contraction of the pupil which lasts ten hours. If one drop of the solution of eserine and one drop of a solution of atropia of equal strength was dropped in the eye, the eserine would cause a contraction of the pupil during the first thirty or forty-five minutes; then its influence was conquered by the action of the atropia which, however, could not produce a complete maximum dilatation of the pupil.

The use of Eserine. L. V. WECKER. (*Klin Monatsbl. f. Augenheilk.*, XV., 2.)

The neutral sulphate of eserine forms needles of a yellowish white color. These crystals are very hygroscopic, so much so that in an ill-corked bottle they will melt into a yellowish-brown, resin-like substance. Eserine is soluble in water, making a clear solution with slight yellowish tinge, which gradually (in summer, within twenty-four hours, in the colder season, not till the second or third day) changes to a pink color, and finally assumes a deep red hue. This discoloration is due to a process of oxydation, which weakens the peculiar properties of the eserine. Therefore, the solution loses its power in the same rate as the discoloration proceeds. W. has been employing the eserine since 1875, after the extraction of cataracts without iridectomy. Lately he also used a one per cent. solution every half hour or every hour:

1. In extensive ulcerations of the cornea, with pus in the anterior chamber after the removal of the pus through a puncture of the cornea. He has seen cases in which two-thirds of the anterior chamber were filled with pus; this was removed and eserine was faithfully instilled. The next day not a trace of pus could be discovered in the anterior chamber, while the paracentesis of so large a hypopyon was usually followed by a reproduction of pus where atropia was used.

2. In the progressive ulcers (*ulcus serpens*) of the cornea. The ulcer is cut across after Saemisch's method, but instead of opening the incision every day afterwards, W. does not touch the cornea at all, but simply

relies on the energetic use of eserine. The subsequent opacities are less extensive, allowing even in extreme cases a good chance for restoring the eye-sight by means of an iridectomy.

3. In suppuration of the cornea following the extraction of cataract. As soon as the edges of the wound grow hazy, the aqueous humor turbid and the secretion of the conjunctiva is increased, the wound in its entire extent is re-opened with a fine spatula, in order to draw off all the aqueous humor. Eserine is instilled every hour or thirty minutes, and the eye washed frequently with a warm solution of carbolic acid (one part to thousand parts of water). W. holds the suppuration in these cases to be caused by a septic infection, and therefore treats them antiseptically. He also believes in an antiseptic action of the eserine to which more than to the carbolized lotion he is inclined to attribute the good result of his treatment.

The Antiseptic Property of Eserine and Atropia. SCHMIDT-RIMPLER.
(*Klin. Monatsbl. f. Augenheilkunde*, XV., 127.)

The vaccination of a rabbit's cornea, with the secretion of a blennorrhœal lachrymal sac is always followed by a destructive suppurative inflammation of the cornea. But this specific keratitis does not come on if the blennorrhœal virus has previously been twenty minutes treated with chlorine water, carbolic or salicylic acid. Such experiments prove conclusively the disinfectant effect of these remedies. Similar experiments made with solutions of eserine and atropia gave a negative result. The blennorrhœal virus did not lose its specific effect by remaining in these solutions from 20 to 50 minutes.

Keratitis Produced by the Inoculation of Vaccine Virus. CRITCHETT.
(*Revue d' Ophthalmologie*, January, 1877.)

Critchett had lately been consulted by a confrere, who three weeks previously while vaccinating a child, received the charge of the lancet into his right eye. Dreading the action of the lymph on the cornea and conjunctiva, he at once washed his eye out, but after twenty-four hours the eye began to inflame and an infiltration appeared in the cornea occupying about two-thirds of the external half of that membrane. The form of the lesion did not leave any doubt but that it was a regular vaccine pustule. After three months all inflammation had disappeared and the opacity of the cornea had decreased in extent; but still Critchett believed an iridectomy was necessary in order to restore a somewhat satisfactory sight.

ANNOUNCEMENTS FOR THE MONTH.

MONDAYS. SOCIETIES.

Chicago Medical Society. Regular meetings—*Mondays, June 4 and 18.*

Chicago Soc. of Phys. and Surgeons. Regular meetings—*Mondays, June 11 and 25.*

CLINICS. Every Monday.

At Eye and Ear Infirmary—2 P. M.—Prof. Holmes.

At Central Dispensary (Wood and Harrison sts.)—2 P. M. *Gynecological*, Dr. Adolphus; 3 P. M. *Diseases of Children*, Dr. R. S. Hall.

At Mercy Hospital—2½ P. M. *Surgical*, Prof. Andrews.

At Rush College—2¼ P. M. *Medical*, Dr. Bridge.

LECTURES. Every Monday.

At Rush College (Harrison and Wood sts.)—9 to 1 o'clock, Drs. Wadsworth, Jackson, Danforth and Knox. At Chicago College—8 to 11, Profs. Hatfield, Jewell, and Curtis; 3¼, Quine.

At Woman's College—3 to 5, Profs. Paoli and Byford.

TUESDAYS. SOCIETIES.

Academy of Sciences. Regular meeting at S. P. M. (263 Wabash av.)—*Tuesday, June 12.*

CLINICS. Every Tuesday.

At Eye and Ear Infirmary—2 P. M., Prof. Jones.

At County Hospital—2 P. M., *Medical*, Prof. Johnson; At 3 P. M., *Surgical*, Prof. Gunn.

At Mercy Hospital, 2 P. M. *Medical*, Prof. Hollister.

LECTURES. Every Tuesday.

At Rush College—9 to 1, Drs. Owens, Bridge, Strong and Case. At Chicago College—9 to 11, Profs. Jewell and Byfo d.

At Woman's College—9 to 11, Profs. Hayes and Earle.

WEDNESDAY. CLINICS. Every Wednesday.

At County Hospital—2 P. M., *Ophthalmological*, Dr. Montgomery; 3 P. M., *Gynecological*, Prof. Quine.

At Mercy Hospital—2¼ P. M., *Ophthalmological*, Prof. Jones.

At Central Dispensary—2 P. M., *Surgery*, Dr. Loomis; *Diseases of Chest*, Dr. Ingals; 3. *Gynecological*, Prof. Etheridge.

LECTURES. Every Wednesday.

At Rush College—9 to 1, Drs. Wadsworth, Ingals and Sawyer. At Chicago College—9 to 11, Profs. Hyde and Steele; 3¼, Jones.

At Woman's College—9 to 11, Prof. Marguerat and Dr. Hale.

THURSDAYS. CLINICS. Every Thursday.

At Eye and Ear Infirmary—2 P. M., Prof. Hotz.

At Mercy Hospital—2¼ P. M., *Medical*, Prof. Davis.

At Rush College—2 P. M., *Medical*, Prof. Ross; 3 P. M., *Diseases of the Nervous System*, Prof. Lyman.

At Central Dispensary—2 P. M., *Surgical*, Prof. Graham.

LECTURES. Every Thursday.

At Rush College—9 to 1, Drs. Hayes, Bridge, Strong and Case. At Chicago College—9 to 11, Prof. Quine and Steele; 3¼, Byford and Roler.

At Woman's College—9 to 11, Profs. Thompson and Graham.

FRIDAYS. SOCIETIES.

State Microscopical Society of Illinois. Regular meeting, 8 P. M.—*Friday, June 8.*

CLINICS. Every Friday.

At County Hospital—2 P. M., *Medical*, Prof. Johnson; 3 P. M., *Surgical*, Prof. Gunn.

At Mercy Hospital—2¼ P. M., *Medical*, Prof. Nelson.

At Central Dispensary—2 P. M., *Diseases of Chest*, Dr. Harroun; 3 P. M., *Dermatological*, Dr. Maynard.

LECTURES. Every Friday.

At Rush College—9 to 1, Drs. Wadsworth, Jackson, Strong and Knox. At Chicago College—8 to 11, Profs. Jones, Hyde, and Curtis; 3¼, Hatfield.

At Woman's College—9 to 11, Profs. Bartlett and Blake.

SATURDAYS. CLINICS. Every Saturday.

At Chicago College—1¼ P. M., *Surgical*, Prof. Andrews or Isham; *Gynecological*, Prof. Nelson; 2¼ P. M., *Medical*, Prof. Johnson.

At Rush College—2 P. M., *Surgical*, Prof. Gunn.

LECTURES. Every Saturday.

At Rush College—9 to 1, Drs. Owens, Bridge, Sawyer and Danforth. At Chicago College—8 to 11, Profs. Merriman, Quine and Byford; 3¼, Hyde.

At Woman's College—9 to 11, Dr. Engert.

At all the above named Clinics visiting regular practitioners are, we believe, admitted.

At the South Side Dispensary (Chicago College) there are six daily special Clinics, for sections of the classes of the Chicago College.

